PHASE II ENVIRONMENTAL SERVICES REPORT

Broad Street Parkway Nashua, New Hampshire

Volume II - Appendices



GEI Consultants, Inc.

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SUBMITTED TO

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288 South River Road Bedford, New Hampshire 03110

April 2002 GEI Project Number 98217 1PH

Appendix A Boring Logs

BORING LOCATION										B1
GROUND	WATE	R EL.		DAT	E LOGGED	BY Brian F. Jankauskas		TAL DEPTH) <u>6.4</u>	Page 1 of 1	
DEPTH FT.		SAMPI BLOWS /6 IN.	E PEN	REC ft.	SOIL AND ROCK DESC	RIPTIONS	FIELD TESTS	STRATUM DESCRIP.		Remarks
0.4	S1 2	29-38 66-33	2	1.9	ASPHALT SAND WITH GRAVEL (SW) Widely (coarse sand, 20% sub-rounded to an non-plastic fines, brown with black, F	gular fine gravel, <5% ILL.		ASPHALT FILL	=	
2.4	S2	13-7 5-6	2	1.3	SAND (SP) Narrowly graded. Mostly <5% non-plastic fines, orange-brown			SAND		
- 4.4 - 5 - 6.4	S3	6-7 8-8	2	1.5	SAND (SW) Widely graded. Mostly f <5% non-plastic fines, brown.	ine to coarse sand,	10			
					Bottom of Boring					
2.0 IN. OI WOR-WEI WOH-WEI PEN-PENI	SPLI GHT C GHT C ETRAT	T SPOO F ROD F ROD ION LE	ON SA S S AN NGTH	MPLI D HAI H OF S	MMER SAMPLER OR CORE BARREL	Notes:Continuous spo	ons driven			
REC-LENGTH OF RECOVERED SAMPLE RQD-LENGTH OF SOUND CORE SECTIONS > 4 IN./LENGTH CORED, % S-SPLIT SPOON SAMPLE SV-TORVANEQP-PENETROMETER Broad Street Parkway U-UNDISTURBED SAMPLE V GROUND WATER										El Consultants, Inc. Project 98217

ORING L	OCAT	TION _	506 174	3+09 1.8	N 40 DATE STAI DATUM NGVD DRILLED B	RT - FINISH11/13/98- BY Maine Test Boring	-11/13/98		B2
OUND	WATI	ER EL.		DA	LOGGED E	Brian F. Jankauskas		TAL DEPTH) 6.4	Page 1 of 1
PTH	TYPE & NO.	SAMP BLOWS /6 IN.		REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
0.4	å NO.	/ 6 IN.	π.	<u></u>	ASPHALT	0.4'	-	ASPHALT	
	S1	46-31 20-12	2	1.0	SAND WITH GRAVEL (SP) Narrowly g medium sand, 20% sub-rounded to an non-plastic fines, brown, FILL.	graded. Mostly fine to gular gravel, <5%			
2.4	S2	5-5 4-4	2	1.1	SAND (SP) Narrowly graded. Mostly f <5% non-plastic fines, brown to black,	ine to medium sand, FILL		FILL	
4.4 5	S3	3-2 2-2	2	1.3	SAND (SP) Narrowly graded. Mostly f <5% non-plastic fines, brown to black,	ine to medium sand, FILL			
6.4	- Control					6.4'			
Γ					Bottom of Boring	6.4'	1		
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0 IN. O R-WE)H-WE N-PEN	D SP IGHT IGHT IETRA	LIT SPO OF ROI OF ROI TION LI	ON S OS OS AN ENGT	AMPL ID HA H OF	MMER SAMPLER OR CORE BARREL	Notes:Continuous spo	ons driver		
D-LEN	NGTH SPOO		IND C	ORE:	SAMPLE SECTIONS > 4 IN./LENGTH CORED, % SV-TORVANEQp-PENETROMETER // GROUND WATER	Broad Stree	et Parkway	,	Φ GEI Consultants, Inc Project 98217

BC	RING	LOCAT	ION _	50	8+12		ART - FINISH 11/13/98- BY Maine Test Boring			B3	
GF	ROUNE) ELEV	ATION ER EL.	1/3	DAT	DATUM NGVD DRILLED LOGGED	BY <u>Brian F. Jankauskas</u>		TAL DEPTH		Page 1 of 1
									6.4		1 ago 1 01 1
H	PTH	TYPE	SAMP		REC	SOIL AND ROCK DESC	RIPTIONS	FIELD TESTS	STRATUM DESCRIP.		Remarks
	FT.	TYPE & NO.	BLOWS /6 IN.	PEN ft.	ft.	Legalat 7	0.4'		ASPHALT		
\vdash	0.4	S1	11-11	2		ASPHALT SAND (SP) Narrowly graded. Mostly			ASFRALI	1	_
			9-8	-		10% sub-rounded fine gravel, <5% no	n-plastic fines, brown,		FILL		1
	0.4			ļ		FILL.	2.4'				
\parallel	2.4	S2	5-5	2	1.0	SAND (SP) Narrowly graded. Mostly				1	
			7-5	1		5% rounded fine gravel, <5% non-pla	stic fines, brown.				
									SAND		
⊩	4.4 5	S3	8-8	2	1.6	SAND (SP) Narrowly graded. Mostly	fine to medium sand,				
	_		7-6			<5% non-plastic fines, brown.					
	6.4						6.4'				
\parallel	0.4					Bottom of Boring					
\parallel		Ш						100			
		Ш									
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						IER FALLING 30 IN. TO DRIVE A	Notes:Continuous spo	ons driven			
			LIT SPO		HIVIPL						9
W	OH-WI	EIGHT	OF RO	OS AN							
						SAMPLER OR CORE BARREL AMPLE					
R	QD-LEI	NGTH	OF SOU	IND C	ORE:	SECTIONS > 4 IN./LENGTH CORED, %	Broad Stree	t Parkway	7- 10-	ΦGI	El Consultants, Inc. Project 98217
	S-SPLIT SPOON SAMPLE SV-TORVANEQP-PENETROMETER Broad Street Parkway Project 98217 U-UNDISTURBED SAMPLE V GROUND WATER										

BORING LOCATION 508+06 N 7 DATE START - FINISH 11/13/98-11/13/98 GROUND ELEVATION 174.8 DATUM NGVD DRILLED BY Maine Test Boring								B4					
GROUND GROUND	WAT	ER EL.	174	DA	DATUM NGVD DRILLED F LOGGED I	BY <u>Maine Test Boring</u> BY <u>Brian F. Jankauskas</u>		TAL DEPTH	Page 1 of 1				
DEPTH		SAMP	I E			(Ft.) 6.4 FIELD STRATUM							
FT.	TYPE & NO.	BLOWS /6 IN.		REC ft.	SOIL AND ROCK DESCR	DESCRIP.	Remarks						
0.4	& NO.	1 /6 IN	I It.		ASPHALT	0.2'		ASPHALT					
2.4	S1 S2	12-18 15-14 4-7 8-7	2		Upper 0.4' - SAND WITH GRAVEL (S Mostly fine to medium sand, 20% grav non-plastic fines, brown, FILL. Lower 0.6' - SAND (SP) Narrowly grac medium sand, 5% sub-rounded fine g plastic fines, brown, FILL.	vel and cement, <5% led. Mostly fine to		FILL	S2 no sample				
4.4 5	S3		2	0.6	SAND WITH GRAVEL (SP) Narrowly to medium sand, 30% sub-angular gra<5% non-plastic fines, brown, roots, F	avel and cement,	NO 1						
. 0.7					Bottom of Boring								
10													
15													
20													
25			*										
2.0 IN. C WOR-WE WOH-WE PEN-PEN REC-LEN	D SPEIGHT EIGHT EIGHT IETRA IGTH	LIT SPO OF ROI OF ROI TION LE OF REC	ON S DS DS AN ENGT OVER	AMPL ID HA H OF RED S	MMER SAMPLER OR CORE BARREL SAMPLE	Notes:Continuous spoo	l ons driven		Φ GEI Consultants, Inc.				
RQD-LENGTH OF SOUND CORE SECTIONS > 4 IN./LENGTH CORED, % S-SPLIT SPOON SAMPLE Sv-TORVANEQp-PENETROMETER Broad Street Parkway Project 98217 J-UNDISTURBED SAMPLE <u>V</u> GROUND WATER													

GEI Consultants, Inc.	TEST BORING LOG	PROJECT: Broad Street Parkway NUMBER: 98217 LOCATION: Nashua, NH PAGE BORING NUM OF 0F 1							
BORING LOCATION: Sla 510+20 38N GROUND ELEV. (NGVD): 170.6' START / FINISH DATE: 02/27/01 GW DEPTH / ELEV.: Not Encountered GW DATE / TIME: Not Encountered	TOTAL DEPTH: 22' SOIL BORING: 22' ROCK CORE: 0' DRILLED BY: MTB LOGGED BY: ALS	BLOWS PER 6 IN 140 LB. HAMMER FALLING 30 IN. TO DRIVE A 2.0 IN O.D. SPL SPOON SAMPLER NM - NOT MEASURED PEN - PENETRATION LENGTH OF SAMPLER OR CORE BARREL REC - RECOVERY LENGTH OF SAMPLE RQD - LENGTH OF SOUND CORES > 4 IN. / LENGTH CORED, (%)							
NOTES:		S - SPLIT SPOON SAMPLE A - AUGER SAMPLE U - UNDISTURBED SAMPLE, FIXED PISTON UO - UNDISTURBED SAMPLE, OSTERBERG - MEASURED GWL - MEASURED GWL - ESTIMATED GWL							

ELEV. (ft)	DEPTH (ft)	a	YPE ind MBER	SPT N per 6 in	PEN (in)	REC (in)	REMARKS	GWL	LITH.	USCS SOIL AND ROCK DESCRIPTIONS	STRATA	WELL
170	-		S1	36/2"	2	2	Boring adv. using 4" SSA		1-4-1-4-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	0"-2" ASPHALT (not sampled) (S1) (SW) WIDELY GRADED SAND WITH GRAVEL: ~50% angular to subangular gravel to 3/8", <5% nonplastic fines, brown, FILL.		
	_		S2	9 11 7	24	13	Frozen soil 0'-4'			(S2) 0"-8" (SP) NARROWLY GRADED SAND: Mostly fine sand, ~5% subrounded gravel to 3/8", <5% nonplastic fines, light brown, FILL.		
- 165	-5 -		S3	9 11 7 5 7 5 4	24	15				8"-13" (SP) NARROWLY GRADED SAND: Fine to medium sand, ~5% to 10% coal fragments to 1/8", dark brown to black, (FILL)		
	_						Boring adv. using 5 1/4" HSA		*****	(S3) (SP) Similar to lower S2, FILL.		
- 160	-10 —		S4	2 1 1 1 1	24	2				(S4) (SP) Similar to lower S2 except ~10% subrounded gravel to 3/8", coal ash, FILL.		
	-											
— 155	-15 —		S5	1 1 1	24	10				(S5) (SP) Similar to lower S2 except coal slag to 5/8", FILL.		
	-			1			Augered below 17' due to low N values in fill.		17.17.1		~19'	
— 150 -	-20		S6	4 6 6 8	24	17				(S6) (SP) NARROWLY GRADED SAND: Stratified, fine sand ~5% subrounded gravel to 3/8", light brown, brown, occasional orange layer.		
	-			8			B.O.B.			Boring terminated at 22'.		
- 145	-25 —						-					
- 140	-30 —											
	-35											

BORING LOCATION 713+94 S 23 DATE START - FINISH 11/13/98-11/13/98 GROUND ELEVATION 172.9 DATUM NGVD DRILLED BY Maine Test Boring									
ROUND	WATE	ER EL.	1	DA	TE DATOM NGVD DRIELED B	Y Brian F. Jankauskas		TAL DEPTH) 6.0	Page 1 of 1
PTH	Type	SAMP		REC	SOIL AND ROCK DESCR	PTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
FT.	TYPE & NO.	BLOWS /6 IN.	2		Upper 1.2' - TOPSOIL			TOPSOIL	
	S1 S2	2-3 2-3 1-3 3-3	2		Lower 0.1' - SAND (SP) Narrowly grad medium sand, <5% non-plastic fines, the SAND (SP) Narrowly graded. Mostly founded fine gravel, <5% non-plastic fines.	orown ine sand, 10 sub-		SAND	
_5	S3	3-4 4-3	2	1.6	SAND (SP) Narrowly graded. Mostly f <5% non-plastic fines, brown.	ine to medium sand,			
	THE PERSON					6.0'			
					Bottom of Boring	6.0'			
10									
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_15									
20									
25									
2.0 IN. C NOR-WE NOH-WE	D SPI EIGHT EIGHT	LIT SPO OF ROI OF ROI	ON S SC OS AN	AMPL 1D HA	MMER	Notes:Continuous spo	on driven		
PEN-PENETRATION LENGTH OF SAMPLER OR CORE BARREL REC-LENGTH OF RECOVERED SAMPLE RQD-LENGTH OF SOUND CORE SECTIONS > 4 IN./LENGTH CORED, % S-SPLIT SPOON SAMPLE Sv-TORVANEQp-PENETROMETER U-UNDISTURBED SAMPLE V GROUND WATER D-WINDISTURBED SAMPLE OF									

BORING	LOCA	ION _		21+08	N 4 DATE STA DATUM NGVD DRILLED	TART - FINISH 12/1/98-12/1/98 B3 D BY Maine Test Boring					
GROUNE GROUNE	WAT	ER EL.		DAT		BY <u>Maine Test Boring</u> BY <u>Brian F. Jankauskas</u>		TAL DEPTH	Page 1 of 1		
DEPTH		SAMP			SOIL AND ROCK DESCF	RIPTIONS	(Ft. FIELD TESTS	STRATUM DESCRIP.	Remarks		
FT.	TYPE & NO.	BLOWS /6 IN.	PEN ft.	REC ft.					Remarks		
_ _ _ _	S1	1-2 6-9	2		Upper 0.5' - TOPSOIL Lower 0.5' - SAND WITH GRAVEL (S Mostly fine to medium sand, 15% sub <5% non-plastic fines, brown.			TOPSOIL			
5 5 	S2	4-7 13-13	2		SAND (SP) Narrowly graded. Mostly plastic fines, light brown.	fine sand, 5% non-		SAND AND SAND WITH SILT			
- - - - 10					(e) S						
F	S3	5-6 18-23	2	1.2	SAND WITH SILT (SP-SM) Narrowly 10% non-plastic fines, light brown.		-				
F	1		<u> </u>		Bottom of Boring	12.0'	-				
 -					Bottom of Boring	12.0					
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2.0 IN. (WOR-WI WOH-WI PEN-PEI	OD SPI EIGHT EIGHT NETRA	IT SPO OF ROI OF ROI TION LI	ON SA DS DS AN ENGTI	D HAI	MMER SAMPLER OR CORE BARREL	Notes:Auger boring					
REC-LEI					AMPLE SECTIONS > 4 IN./LENGTH CORED, %				Φ GEI Consultants, I		
S-SPLIT	SPOO	N SAMP	LE	S	v-TORVANEQp-PENETROMETER	Broad Stree	t Parkway		Project 98217		
U-UNDIS	U-UNDISTURBED SAMPLE V GROUND WATER										

ORING I	OCAT	ION _	525+	07		RT - FINISH <u>12/1/98-1</u> BY <u>Maine Test Boring</u>	2/1/98		B17
ROUND	WATE	ATION ER EL.	15	6.0 DA	DATUM <u>NGVD</u> DRILLED E LOGGED E	BY Brian F. Jankauskas		TAL DEPTH) 12.0	Page 1 of 1
EPTH FT.	TYPE & NO.	SAMP BLOWS /6 IN.		REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
	S1	1-1 2-4	2		Upper 0.3' - TOPSOIL Bottom 0.9' - SAND (SP) Narrowly gra medium sand, <5% non-plastic fines, I	0.5' ded. Mostly fine to brown, roots.		TOPSOIL	- - - -
_5	S2	4-6 7-10	2	1.2	SAND (SP) Narrowly graded. Mostly to the complexition of the complexition of the complexity of the complex to t	fine to medium sand,		SAND	
_10	S3	2-8 11-15	2	1.2	SAND (SP) Narrowly graded. Mostly t				
					Bottom of Boring	12.0' 12.0'			
15									
20									
25									
					MER FALLING 30 IN. TO DRIVE A	Notes:Auger boring			
VOR-WI VOH-WI PEN-PEI REC-LEI	EIGHT EIGHT NETRA NGTH	OF REC	DS DS AN ENGT OVER	ND HA 'H OF RED S					Φ GEI Consultants, In
S-SPLIT SPOON SAMPLE SV-TORVANEQP-PENETROMETER Broad Street Parkway Project 98217 J-UNDISTURBED SAMPLE V GROUND WATER									

BORING									B18
GROUNE	WATI	ER EL.	13	DAT		Y Brian F. Jankauskas		TAL DEPTH	Page 1 of 1
L							(Ft.) 12.0'	T
DEPTH		SAMP			SOIL AND ROCK DESCRI	PTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
FT.	TYPE & NO.	BLOWS /6IN.	PEN ft,	REC ft.			IESIS		Remarks
	S1	à	2	0.8	Upper 0.4' - TOPSOIL	1.0'		TOPSOIL	
 -		1-1		-	Lower 0.4' - SAND (SP) Narrowly grade	ed. Mostly fine to			1
⊩		ਁ			medium sand, 5% non-plastic fines, da	irk brown.			
 -									
 									
├ ⁵	S2	3-5	2	13	Upper 0.5' - SAND (SP) Narrowly grade	ed. Mostly fine sand.			
F	"	4-9	-	l	<5% non-plastic fines, light brown.	6.0'			1 1
					Lower 0.8' - SILT WITH SAND (ML) Mo	ostly silt, ~15% fine			
 					sand, gray, low toughness, rapid dilate	ncy. 7.5'			
-									7
F					W .				
 							·		
10	П								
	S3	14-17		1.5	SAND (SP) Narrowly graded. Mostly fi 5% non-plastic fines, gray and orange.	ine to medium sand,			
-	ř.	23-24			15% non-plastic lines, gray and orange.				
						12.0'			
F					Bottom of Boring 1	2.0'			
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30			<u> </u>			Notes:Auger boring	<u> </u>	1	
BLOWS 2.0 IN.					IER FALLING 30 IN. TO DRIVE A	Ground water at ~10' of	n comple	tion of boring	j.
WOR-WI	EIGHT	OF RO	os		a a				
WOH-WI					MMER SAMPLER OR CORE BARREL				
REC-LE	IGTH (OF REC	OVER	RED S	AMPLE				+ 0516
					SECTIONS > 4 IN./LENGTH CORED, %	Broad Stree	t Parkway		Φ GEI Consultants, Inc. Project 98217
	S-SPLIT SPOON SAMPLE Sv-TORVANEQp-PENETROMETER Broad Street Parkway Project 98217 U-UNDISTURBED SAMPLE V GROUND WATER								

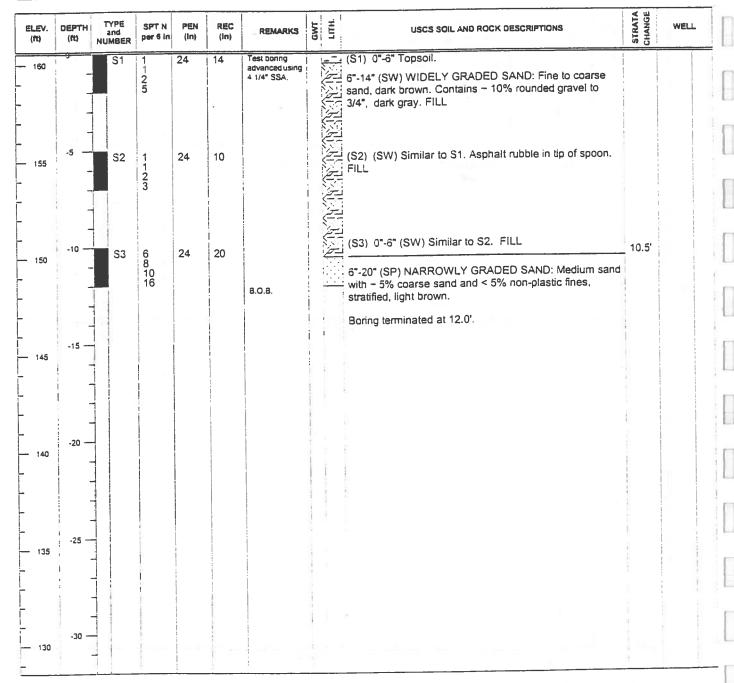
ORING LO	CAT	ION _	5	33+07	DATE STA	RT - FINISH 12/1/98- BY Maine Test Boring	12/1/98		B20
ROUND E				49.0 DAT	E LOGGED	BY Brian F. Jankauskas		TAL DEPTH) 12.0	Page 1 of 1
EPTH T	YPE NO.	SAMP BLOWS /6 IN.		REC	SOIL AND ROCK DESCR	RIPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
		3-10 10-9	2		Upper 0.4' - TOPSOIL Lower 0.6' - SAND WITH GRAVEL (S Mostly fine to medium sand, 15% roul 5% non-plastic fines, brown.	0.8' P) Narrowly graded. nded fine gravel,		TOPSOIL	
5	S2	53 50/0.2'	0.7	0.2	GRAVEL WITH SAND (GP) Narrowly gravel, 40% fine to coarse sand, <5% brown.	graded. Mostly fine non-plastic fines,	3	SANDS AND GRAVEL	
_10	S 3	29-51 30-46	2	0.9	SAND (SP) Narrowly graded. Mostly 10% rounded to angular gravel, 5% n	on-plastic fines, brown.			
_15					Bottom of Boring	12.0'			
_20									
_25									
.0 IN. OD	SPL	IT SPO	ON S		IER FALLING 30 IN. TO DRIVE A ER	Notes: Auger boring			
EC-LENG	GHT TRA STH (STH (POO!	OF ROU TION LE OF REC OF SOU N SAMF	OS AN ENGT OVEF IND C PLE	H OF RED S ORE S	SAMPLER OR CORE BARREL	Broad Stree	t Parkway	,	Φ GEI Consultants, Inc Project 98217

BORING GROUND	LOCAT	ION _		35+35 4.7		RT - FINISH 12/1/98- BY Maine Test Boring	12/1/98	_	B21
GROUND				DAT		BY Brian F. Jankauskas		TAL DEPTH) 17.0	Page 1 of 1
DEPTH FT.	TYPE	SAMP	LE PEN	REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
-	S1	5-5 6-7	2		SAND WITH GRAVEL (SW) Widely g to coarse sand, 20% rounded and ang plastic fines, brown.	raded. Mostly fine gular gravel, <5% non-			
5 5	S2	19-15 11-16			SAND WITH GRAVEL (SW) Widely g to coarse sand, 15% sub-angular coar plastic fines, brown.	raded. Mostly fine se gravel, <5% non-		SAND	
	S3	10-17	2	1.0	SAND WITH GRAVEL (SW) Widely g	raded. Mostly fine		WITH GRAVEL	
- - - - - -		16-17			to coarse sand, 15% sub-rounded to a fine plastic fines, brown.				
15 	S4	9-14 19-19	2	1.2	SAND (SP) Narrowly graded. Mostly <5% non-plastic fines, light brown.	17.0'		ű.	
F					Bottom of Boring	17.0'			
20 									
- - - -									
25 							Å		
30						Notoe: Augus having		1	
2.0 IN. 0 WOR-WI WOH-WI	DD SPL EIGHT (EIGHT (NETRAT	IT SPO OF ROD OF ROD TION LE	ON SA S AN NGTI	AMPLI D HAI H OF S	MMER SAMPLER OR CORE BARREL	Notes: Auger boring			i i
	NGTH (SPOON	F SOU SAMP	ND C LE	ORE S	SECTIONS > 4 IN./LENGTH CORED, % -TORVANEQp-PENETROMETER GROUND WATER	Broad Stree	t Parkway		El Consultants, Inc. Project 98217

SORING L	OCAT	TION _		6+34 i	N 54 DATE STA DATUM NGVD DRILLED B	RT - FINISH 12/1/98-1: 3Y Maine Test Boring	2/1/98	_	I	322
GROUND	WATE	ER EL.		DA	TE LOGGED	BY Brian F. Jankauskas		TAL DEPTH)17.0	Pag	ge 1 of 1
DEPTH FT.	TYPE & NO.	SAMP BLOWS /6 IN.		REC ft.	SOIL AND ROCK DESCR	RIPTIONS	FIELD TESTS	STRATUM DESCRIP.	Rer	narks
	S!	1-3	2		Upper 0.1' - TOPSOIL	0.2'		TOPSOIL		
-		5-6			Lower 0.7' - SAND (SP) Narrowly grad 5% non-plastic fines, brown.	led. Mostly fine sand,		SAND		
:	9									
* *2										
		1				4 '				
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_5	S2	10-18	2	1.6	SILTY SAND (SM) Narrowly graded.	Mostly fine sand, 20%				
		16-27			non-plastic fines, light brown and oran	ge.				
	1									
								SILTY		
		1 2						SAND		
10					OIL TV CAND (CAN Alexandre)	Months fire and 450s				
	83	11-18 21-27	2	1.5	SILTY SAND (SM) Narrowly graded. non-plastic fines, light brown and orar					
	5							1		
										1
15										_
_ [S4	12-19		1.5	SILTY SAND (SM) Narrowly graded.	Mostly fine sand, 20%				
		25-31			non-plastic fines, light brown and orar		=			
		-		-	Bottom of Boring	17.0'			 	
<u>'</u>										
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										0.1
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								1		
30										
					IER FALLING 30 IN. TO DRIVE A	Notes:Auger boring				
2.0 IN. C VOR-WE				AMPL	ER					
VOH-WE	IGHT	OF ROD	AA SC		MMER SAMPLER OR CORE BARREL					
REC-LENGTH OF RECOVERED SAMPLE RQD-LENGTH OF SOUND CORE SECTIONS > 4 IN./LENGTH CORED, % Ф GEI Consultants, Inc.										
S-SPLIT S	SPOO	N SAMP	LE	S	v-TORVANEQp-PENETROMETER	Broad Stree	t Parkway		Projec	t 98217
	SPLIT SPOON SAMPLE SV-TORVANEQP-PENETROMETER Broad Street Parkway Project 98217 UNDISTURBED SAMPLE V GROUND WATER									

BORING I				55 W1		RT - FINISH <u>8/12/98-8</u> BY <u>Maine Test Boring</u>	/12/98	_		B28
GROUND GROUND	WATE	ER EL.	143.	DAT	E LOGGED	BY Brian F. Jankauskas		TAL DEPTH		Page 1 of 1
DEPTH		SAMP	LE				(Ft. FIELD) 17.0 STRATUM		
FT.	TYPE & NO.	BLOWS /6.IN.	PEN ft.	REC	SOIL AND ROCK DESCR	IPTIONS	TESTS	DESCRIP.		Remarks
0	S1	2-3	2		Upper 0.3'-TOPSOIL	0,5'		TOPSOIL		
F		2-1			Lower 1.0' -SAND (SP) Narrowly graded. Mostly fine sand, <5	% non-plastic fines	100			
 -					brown. FILL.	70 Horr placed times;				
 -										
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				1	_ ⊛					
├ ─`	S2	13-10	2	1.3	SAND (SW)			FILL		
		10-10			Widely graded. Mostly fine to medium					
 -					gravel, <5% non-plastic fines, mostly lismall amount of roots. FILL.	JIACK,				*
				-	-		1			
 					28					N
 										
F 10						10.0'				
10	S3	12-50	2	1.4	SAND WITH GRAVEL (SW)	10.0				
		39-33			Widely graded. Mostly fine to medium	sand, ~40% angular		CAND		
-	3				to subrounded gravel,<5% non-plastic	tines, brown.		SAND WITH		
E								GRAVEL		
 										
F							_			
15	S4	20-33	2	1.1	SAND WITH GRAVEL (SW)					
		27-17			Widely graded. Mostly fine to coarse					
 -					subrounded gravel, <5% non-plastic fi	nes, 17.0'		,		
					Bottom of Boring	17.0'				
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	PER 6	IN 140	LB.	HAMM	IER FALLING 30 IN. TO DRIVE A	Notes:				
2.0 IN. C	D SPL	IT SPO	ON S							
WOR-WE				ID HA	MMER	Cased (drive) wash bo	ring.			19
PEN-PEN	IETRA	TION LE	ENGT	H OF	SAMPLER OR CORE BARREL	7.				
	IGTH	OF SOL	IND C	ORE	SECTIONS > 4 IN./LENGTH CORED, %					El Consultants, Inc.
S-SPLIT					v-TORVANEQp-PENETROMETER GROUND WATER	Broad Stree	t Parkway			Project 98217
פוטאטיס-טון	IOND	רה פאוע	14 LC		OLOGIAD HULEL					

GEI Consultants, Inc.	TEST BORING LOG	PROJECT: Sargent Avenue Extension NUMBER: 98217 LOCATION: Nashua, NH	PAGE BORING NUMBER OF B-30
BORING LOCATION: STA 214+50 GROUND ELEV. (NGVD): 160.6* START / FINISH DATE: 07/25/00 (07:00-7:30) GW DEPTH / ELEV.: No GWT encountered GWT DATE / TIME: NM	TOTAL DEPTH: 12.0' SOIL BORING: 12.0' ROCK CORE: 0.0' DRILLED BY: MTB. TS LOGGED BY: ALS	BLOWS PER 6 IN 140 LB. HAMMER FALLING 30 IN. SPOON SAMPLER NM - NOT MEASURED PEN - PENETRATION LENGTH OF SAMPLER OR COR REC - RECOVERY LENGTH OF SAMPLE RQD - LENGTH OF SOUND CORES > 4 IN. / LENGTH	E BARREL
NOTES:		S - SPLIT SPOON SAMPLE A - AUGER SAMPLE U - UNDISTURBED SAMPLE	- MEASURED GWT
		UF - UNDISTURBED SAMPLE, FIXED PISTON UO - UNDISTURBED SAMPLE, OSTERBERG	- ESTIMATED GWT



BORING L					DATE STA DATUM NGVD DRILLED B	RT - FINISH 8/1298-8/ BY Maine Test Boring	12/98	-		B31
GROUND GROUND	WATE	R EL.	104.2	DAT	E LOGGED E	BY Brian F. Jankauskas		TAL DEPTH		Page 1 of 1
DEPTH		SAMF	PLE				(Ft. FIELD) 17.0 STRATUM		
FT.	TYPE	BLOWS	PEN	REC	SOIL AND ROCK DESCR	IPTIONS	TESTS	DESCRIP.		Remarks
0	S1	11-5	2		Upper 0.3'-TOPSOIL	0.3'		TOPSOIL	-	
-		4-8			Lower 0.9'-SAND (SP) Narrowly graded. Mostly fine sand, 10' <5% non-plastic fines, 5% roots, brow	% fine gravel n.		ı		
_ _ _ _ _ 5										
-	S2	2-2 4-4	2	0	No recovery.			1-37		
 	S3	4-5 4-5	2	0.2	SAND (SW) Widely graded sand. Mostly fine to co- plastic fines, brown.	arse sand, <5% non-		SAND	L	
10 	S4	4-5 5-7	2	1.7	SAND (SW) Widely graded. Mostly fine to medium fines, brown, <10% coarse sand and g	sand, <5% non-plastic gravel.				
15	S5	1-2 6-8	2	1.9	SILT WITH SAND (ML) Rapid dilatency, medium plasticity, lov ~35% fine sand. Uneven gray and bro	own stratification.				
_			-	-	Bottom of Boring	17.0' 17.0'		-		
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30	Ц.,			<u> </u>	<u> </u>	The second secon		1		
2.0 IN. C WOR-WE WOH-WE PEN-PEN REC-LEN	D SPL IGHT IGHT IETRA IGTH (IT SPO OF ROI OF ROI TION LI OF REC	ON S DS DS AN ENGT	AMPL ID HA IH OF RED S	MMER SAMPLER OR CORE BARREL AMPLE	Notes: Asbestos sample from Auger boring.	15'.		4.00	Ti Consultanta La-
RQD-LEN S-SPLIT S U-UNDIS	SPOOR	N SAMF	PLE	S	SECTIONS > 4 IN./LENGTH CORED. % v-TORVANEQp-PENETROMETER GROUND WATER	Broad Stree	t Parkway			El Consultants, Inc Project 98217 February 1999

BORING LOCATION							_	B32	
ROUND	WATE	ER EL.	18	DA		Y Brian F. Jankauskas		TAL DEPTH) 12.5	Page 1 of 1
EPTH FT.	TYPE & NO.	SAMP BLOWS /6 IN.		REC ft.	SOIL AND ROCK DESCRI	PTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
	S1	1-2 6-14	2		Upper 0.5' - TOPSSOIL Lower 0.4' - SAND WITH SILT (SP-SM Mostly fine sand, 10 non-plastic fines,	1.0' 1) Narrowly graded. brown, roots.		SAND WITH SILT	
_5	S2	18-36 37-34	2	1.0	SAND WITH GRAVEL (SW) Widely gr coarse sand, 25% sub-rounded to ang non-plastic fines, brown.	aded. Mostly fine to ular gravel, <5%	-	SAND WITH GRAVEL	
10					Cobbles from 8' to 10.5'				
10.5	S3	30-41 46-52	2	1.0	SAND WITH GRAVEL (SW) Widely graves sand, 30% angular gravel, <5% brown.	raded. Mostly fine to hon-plastic fines,			
12.5					Bottom of Boring 1				
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2.0 IN. C /OR-WE /OH-WE EN-PEN	D SP IGHT IGHT IETR/	LIT SPO OF ROI OF ROI TION LI	ON S OS OS AI ENGT	AMPI ND HA 'H OF		Notes:Auger boring			
QD-LEN	IGTH SPOC		JND (CORE	SECTIONS > 4 IN./LENGTH CORED, % SY-TORVANEQP-PENETROMETER // GROUND WATER	Broad Stree	et Parkway	,	Φ GEI Consultants, Inc Project 98217

BORING GROUND	LOCA	TION 2	187.2	W17		ART - FINISH 8/12/98-8 BY Maine Test Boring	/12/98			B33
GROUND	WAT	ER EL.	107.2	DAT	ELOGGED	BY Brian F. Jankauskas		TAL DEPTH)12.0		Page 1 of 1
DEPTH		SAMP			SOIL AND ROCK DESCR	RIPTIONS	FIELD TESTS	STRATUM DESCRIP.	-	Remarks
FT.	TYPE & NO.	/6 IN.	PEN ft.	REC ft.		0.51	12010	TOPSOIL		1.011.01
0	S1	1-1 3-4	2		Upper 0.2'-TOPSOIL Pine Needles. Lower 1.1'-SAND (SP) Narrowly graded. Mostly fine sand, 5' brown.	0.5' % non-plastic fines,		TOPSOIL		
5	S2	6-10 19-28	2		Upper 0.2'-SAND (SP) Narrowly grade Mostly fine sand, <5% non-plastic fine Lower 0.7'-SAND WITH GRAVEL (SV Mosty fine to coarse sand, ~40% subligravel, <5% non-plastic fines, brown.	es, brown. V) Widely graded.		SAND AND SAND WITH GRAVEL		
10 10	S3	6-12 10-13		1.2	SAND (SP) Narrowly graded. Mostly medium sar <5% non-plastic fines, brown.	12.0'				
					Bottom of Boring	12.0'				
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20										
							all		1	
25									1	1
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2.0 IN. (WOR-W WOH-W PEN-PEI REC-LEI	OD SPI EIGHT EIGHT VETRA VGTH (LIT SPO OF ROD OF ROD TION LE OF REC	ON SA DS AN ENGTI OVER	AMPL D HAI H OF S	MMER SAMPLER OR CORE BARREL AMPLE	Notes: Auger boring.				
	NGTH SPOO	OF SOU N SAMP	ND C	ORE S	SECTIONS > 4 IN./LENGTH CORED, % v-TORVANEQp-PENETROMETER GROUND WATER	Broad Stree	t Parkway			Consultants, Inc. roject 98217

ROUND		ATION R EL.	186	6.6 DAT	DATUM NGVD DRILLED E LOGGED I	Page 1 of 2			
PTH		SAMP	LE		SOIL AND ROCK DESCR	PIPTIONS	FIELD	STRATUM	
т	TYPE & NO.	BLOWS /6 IN.	PEN ft.	REC ft,	SOIL AND ROCK DESCR		TESTS	DESCRIP.	Remarks
	S1	2-5 16-23	2		Upper 0.1' - TOPSOIL Lower 0.8' - SAND (SW) Widely grade 25% rounded fine gravel, <5% non-pla roots.			TOPSOIL	
5	S2	35-61 26-43 /0.4'	1.9	1.2	SAND WITH GRAVEL (SW) Widely g coarse sand, 20% rounded to angular plastic fines, brown to light brown, roo	gravel, 5-10% non-			
10	S3	47-42	2	0.5	SAND WITH GRAVEL (SP) Narrowly	graded. Mostly fine		SAND WITH	
:		53-96	_		and coarse sand, 25% rounded and a non-plastic fines, brown.	ngular gravel, 5-10%		GRAVEL	
15	S4	28-25 31-23	2	0.5	SAND WITH GRAVEL (SP) Narrowly medium sand, 20% rounded to angula plastic fines, gray-brown.	graded. Mostly fine to ar fine gravel, <5% non-			
20	S5	29-16 13-16		0.6	SAND WITH GRAVEL (SP) Narrowly medium sand, 15% rounded to sub-ro <5% non-plastic fines, gray-brown.	graded. Mostly fine to ounded fine gravel,			
25	S6	20-25 37-39		0.9	SAND (SP) Narrowly graded. Mostly plastic fines, brown.	23.5		SAND	
0 IN. C DR-WE DH-WE	DD SPL EIGHT EIGHT	IT SPO OF ROD OF ROD	ON SA OS AN	AMPL ID HA		Notes:Auger 0-5' Case (driven) wash bo	ring 5' to 4	12'	
D-LEN	NGTH (ND C	ORE S	AMPLE SECTIONS > 4 IN./LENGTH CORED, % v-TORVANEQp-PENETROMETER GROUND WATER	Broad Stree	t Parkway		Φ GEI Consultants, I

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BORING				0+56 6 6		RT - FINISH <u>12/2/98-12/</u> BY <u>Maine Test Boring</u>	2/98	_		B38
GROUN	D WAT	ER EL.		DAT	E LOGGED E	BY Brian F. Jankauskas		TAL DEPTH) _42_		Page 2 of 2
DEPTH FT.	TYPE & NO.	SAMP BLOWS /6 IN.	LE PEN	REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP		Remarks
30		26-35 59-54	2	0.9	SAND (SP) Narrowly graded. Mostly to non-plastic fines, gray-brown.	ine sand, 5-10%	I			
E								SAND		
35		=			ı					-
	S8	32-39 50-56	2	0.9	Similar to S7					
				_		38.5'				
40	\$9	50-59			SILTY SAND (SM) Narrowly graded.	Mostly fine sand, 15%		SILTY SAND		
E		78-83			non-plastic fines, brown-gray.	42.0'				
E					Bottom of Boring 4	12.0'				
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2.0 IN. WOR-W WOH-W PEN-PE	OD SP /EIGHT /EIGHT :NETRA	LIT SPO OF ROI OF ROI TION LE	ON SA DS AN ENGTI	AMPL ID HAI H OF :	MMER SAMPLER OR CORE BARREL	Notes:				
RQD-LE S-SPLII	ENGTH I SPOO	OF REC OF SOU N SAMP ED SAM	IND C	ORE S	AMPLE SECTIONS > 4 IN./LENGTH CORED, % v-TORVANEQp-PENETROMETER GROUND WATER	Broad Stree	t Parkway		Φ GE	El Consultants, Inc.

ORING LO				3+06	DATE STA DATUM NGVD DRILLED B	RT - FINISH 12/1/98-12 BY Maine Test Boring	2/1/98	_	B39A	
ROUND (WATE	ER EL.	13	36.9 DA	TE LOGGED E	BY Brian F. Jankauskas		TAL DEPTH) 11.7	Page 1 of 1	
EPTH FT.	TYPE & NO.	SAMP BLOWS /6 IN.		REC ft.	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks	
	S1	1-1 2-3	2		Upper 0.7'- TOPSOIL	1.0'		TOPSOIL	7 -	
		2-3			Lower 0.5' - SILTY SAND (SM) Narrov fine sand, ~25% non-plastic fines, grant	vly graded. Mostly	6	SILTY SAND		
_5	S2	47-84	1	0.6	B39 encountered refusal at 4.5' cobbles/boulders 4' to 6' GRAVEL WITH SAND (GW) Widely g to coarse rounded to angular gravel, 4 sand, 5% non-plastic fines, brown.	raded. Mostly fine .0% fine to coarse 8.0		GRAVEL WITH SAND		
_10	S3	24-33 43-50 /0.2'	1.7	1.0	SAND WITH GRAVEL (SW) Widely g coarse sand, 25% sub-rounded to ang <5% non-plastic fines, brown.	gular fine gravel, 11.7'		SAND WITH GRAVEL		
_15					Bottom of Boring					
_20										
25										
2.0 IN. OI VOR-WEI VOH-WEI PEN-PENI	D SPI IGHT IGHT ETRA	LIT SPO OF ROI OF ROI TION LE	ON S OS OS AN ENGT	AMPL ND HA 'H OF	MMER SAMPLER OR CORE BARREL	Notes: Auger boring B39 located on roadwa	ay centerli	ne encounter	red refusal at 4.5'.	
REC-LENG RQD-LENG S-SPLIT S J-UNDIST	GTH POO	OF SOU N SAMP	IND C	ORE S	SAMPLE SECTIONS > 4 IN./LENGTH CORED, % SV-TORVANEQp-PENETROMETER // GROUND WATER	Broad Stree	t Parkway		Φ GEI Consultants, Inc Project 98217	

PAGE BORING NUMBER PROJECT: Broad Street Parkway GEI Consultants, Inc. **TEST BORING LOG** NUMBER: 98217 OF **B64** LOCATION: Nashua, NH Sta 863+97 8E TOTAL DEPTH: 17' BLOWS PER 6 IN. - 140 LB. HAMMER FALLING 30 IN. TO DRIVE A 2.0 IN O.D. SPLIT BORING LOCATION: GROUND ELEV. (NGVD): 153.1' SOIL BORING: SPOON SAMPLER START / FINISH DATE: 02/27/01 NM - NOT MEASURED ROCK CORE: PEN - PENETRATION LENGTH OF SAMPLER OR CORE BARREL REC - RECOVERY LENGTH OF SAMPLE RQD - LENGTH OF SOUND CORES > 4 IN. / LENGTH CORED, (%) мтв GW DEPTH / ELEV.: Not Encountered DRILLED BY: GW DATE / TIME: Not Encountered LOGGED BY: ALS S - SPLIT SPOON SAMPLE NOTES: - MEASURED GWL A - AUGER SAMPLE U - UNDISTURBED SAMPLE UF - UNDISTURBED SAMPLE, FIXED PISTON UO - UNDISTURBED SAMPLE, OSTERBERG - ESTIMATED GWL

ELEV.	DEPTH (ft)	TY ar NUM	PE ad IBER	SPT N per 6 in	PEN (in)	REC (in)	REMARKS	GWL	LITH.	USCS SOIL AND ROCK DESCRIPTIONS	STRATA	WELL
- 150	-		S1	8 13 8 4	24	11	Boring adv. using 4" SSA			0"-1" ASPHALT (not sampled) (S1) (SW-SM) WIDELY GRADED SAND WITH SILT AND GRAVEL: ~25% angular to subrounded gravel to 1/2", ~10% nonplastic fines, light brown to brown, FILL.	~4'	
	-5 —		S2	3 3 4 5	24	13	Boring adv. using 5 1/4" HSA			(S2) (SP) NARROWLY GRADED SAND: Stratified, fine sand, light brown with occasional orange layer.		
- 14 5	-10 —		S3	10	24	15				(S3) (SP) Similar to S2.		
- 140				5 4 4								Ī
	-15 —		S4	3 5 6 8	24	21				(S4) (SP) Similar to S2.		
- 135	-20 —						B.O.B.			Boring terminated at 17'.		4
- 130	-25											
- 125												
	-30 —											
- 120	-										=	

BORING LOCAT	ION _	N 864+57 W 36 DATE START - FINISH 9/3/98-9/3/98 ION 152.8 DATUM NGVD DRILLED BY Maine Test Boring					B65	
GROUND ELEVAGE	ER EL.	102	DA		BY Brian F. Jankauskas TOTAL DEPTH (Ft.) 17,0			Page 1 of 1
FT. TYPE	SAMP BLOWS /6 IN.		REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
0 S1	6-10 13-15	2		Asphalt SAND (SW) Widely graded. Mostly fine to coarse subangular gravel, 5% non-plastic fine Top 0.2' is black, bottom 0.4' is brown	s, 5% ash.		ASPHALT FILL	
_5 	1-8 8-10	2	1.2	SAND (SP) Narrowly graded. Mostly fine sand, < brown.			SAND	
10 s3	7-9 10-11	2	1.8	Similar to S2.			į	
_15 s4	9-11 13-14		1.9	SAND (SP) Narrowly graded. Mostly fine sand, < fines, brown with orange stratification.	5% non-plastic 17.0°			
_20				Bottom of Boring				
2.0 IN. OD SPI VOR-WEIGHT VOH-WEIGHT	LIT SPO OF ROI OF ROI (TION LI	ON S DS DS AN ENGT	AMPL ND HA 'H OF	MMER SAMPLER OR CORE BARREL	Notes: Auger boring.			
RQD-LENGTH OF SOUND CORE SECTIONS > 4 IN./LENGTH CORED, % S-SPLIT SPOON SAMPLE Sv-TORVANE Qp-PENETROMETER Broad Street Parkway U-UNDISTURBED SAMPLE V GROUND WATER								

BORING L GROUND	OCAT	ION 23	31+04 152 5		DATE STA	RT - FINISH <u>9/3/98-9/3/</u> BY <u>Maine Test Boring</u>		B66		
GROUND	WATE	ER EL.	192.5	DAT	E LOGGED	BY Brian F. Jankauskas		TAL DEPTH)7.0	Page 1 of 1	
DEPTH		SAMP	LE			NOTIONS	FIELD	STRATUM		
FT.	TYPE & NO.	BLOWS /6 IN.	PEN ft.	REC ft.	SOIL AND ROCK DESCR		TESTS	DESCRIP.	Remarks	
L 0	S1		2	1.0	Upper 0.2'-TOPSOIL Lower 0.8'-SAND (SP)	0.4'		TOPSOIL	-	
		11-12			Narrowly graded. Mostly fine sand,				40	
F 1					<5% non-plastic fines, brown, brick. F	ILL		FILL	_	
L 1	10					~3'		11		
					- 1					
	S2	3-4 5-7	2	1.2	SAND (SP) Narrowly graded. Mostly fine to media	ım sand		SAND		
		5-7			<5% non-plastic fines, brown.			OAND		
F					Bottom of Boring	7.0'				
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F 10										
F 1										
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2.0 IN. O	D SPL	IT SPO	ON SA		ER FALLING 30 IN. TO DRIVE A ER					
WOR-WE WOH-WE				D HAI	MMER	Auger boring.			,	
	ETRA	TION LE	NGT	H OF	SAMPLER OR CORE BARREL	8 8 11	3 =0			
	GTH (OF SOU	ND C	ORE S	SECTIONS > 4 IN./LENGTH CORED, % /-TORVANE Qp-PENETROMETER					
U-UNDIST					GROUND WATER	Broad Oute	aikway		1.0,000.00217	

ND W	ATE	R EL.		. DAT	DATUM NGVD DRILLED B	Brian F. Jankauskas	(Ft.	TAL DEPTH)7.0	Page 1 of 1
1	-	SAMP		REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
		BLOWS / 6 IN.		l n.					
		13-16 17-17	2	1.4	SAND (SW) Widely graded. Mostly fine to coarse s fines. 0.3'-thick lense of ash at 1', brow	sand, <5% non-plastic n. FILL.		FILL	
						4.0'			
	S2	13-6 6-9	2	1.1	SAND (SP) Narrowly graded. Mostly fine sand, <5% non-plastic fines, brown.	7.0'		SAND	
\mathbb{H}			-	\vdash	Bottom of Boring				
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V. OD WEIG	SPL SHT	IT SPC OF RO OF RO	ON S DS DS Al	SAMPI ND HA	MER FALLING 30 IN. TO DRIVE A LER AMMER SAMPLER OR CORE BARREL	Auger boring.			
ENG ENG	TH C	OF REC	JND (RED S	SAMPLE SECTIONS > 4 IN./LENGTH CORED, % SV-TORVANE Qp-PENETROMETER	Broad Stree	et Parkway		Φ GEI Consultan Project 982

BORING	LOCAT	ION 8	70+04 150 °	1 W 5		ART - FINISH <u>8/13/98-8</u> BY <u>Maine Test Boring</u>	/13/98	-	B71
GROUND) WATE	ER EL.	100.	DA	re LOGGED	BY Brian F. Jankauskas		TAL DEPTH) _ 27.0 _	Page 1 of 1
DEPTH FT.	TYPE & NO.	SAMF BLOWS /6 IN.	PEN ft.	REC ft.	SOIL AND ROCK DESCR	RIPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
0	S1	2-7	2		Upper 0.3'-TOPSOIL	0.5'		TOPSOIL	
_ _ _		14-8			Lower 0.6'-SAND (SP) Narrowly graded. Mostly medium san ~30% coal-like material, <5% non-pla	d, 5% fine gravel, stic fines, black. FILL.			
_ _ _ _	S2	1-0 1-1	2	0.7	SAND (SW) Widely graded. Mostly fine to coarse material, <5% non-plastic fines, black			FILL	
_ _ _ _					*				
10	S3	1-2 1-1	2	0.9	SAND WITH GRAVEL (SP) Narrowly graded. Mostly fine sand, 15 gravel, ~25% coal, <5% non-plastic fir Upper 0.6' black, lower 0.3' brown. FI	nes.			
15 15 	S4	1-2 2-3	2	1.4	SAND (SP) Narrowly graded. Mostly fine sand, 10 plastic fines, brown. FILL.	0% gravel, <5% non-			Gravel lodged in tip of spoon
20	S5	3-3 3-2	2	1.5	SAND (SP) Narrowly graded. Mostly fine sand, 10 <5% non-plastic fines, tan with brown.				
 -					li .	23.5'	l II		
25	S6	2-4 5-5	2	1.4	SAND (SW) Widely graded.Mostly fine to medium	sand 5% gravel		SAND	
		3-3			<5% non-plastic fines, brown. Slight s	tratification observed. 27.0'		OAND	
_					Bottom or Boring	21.0			1 2
- - 30									
2.0 IN. C WOR-WE WOH-WE	D SPL EIGHT (EIGHT (IETRA	IT SPO OF ROD OF ROD TION LE	ON SA DS AN ENGTI	AMPL ID HAI H OF	MMER SAMPLER OR CORE BARREL	Notes: Auger boring.			
	NGTH (OF SOU SAMP	IND C	ORE S	SECTIONS > 4 IN./LENGTH CORED, % y-TORVANE Qp-PENETROMETER GROUND WATER	Broad Street	t Parkway		Φ GEI Consultants, Inc Project 98217

	D ELEVATION 151.7 DATUM NGVD DRILLED BY Maine Test Boring D WATER EL. DATE LOGGED BY Brian F. Jankauskas (Ft.) 27.0					Page 1 of		
DEPTH	TYPE	SAMP BLOWS /6 IN.		REC ft.	SOIL AND ROCK DESCRIPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
FT.	TYPE & NO.	/6 IN. 10-15	7-		Upper 0.2' Asphalt. 0.2'		ASPHALT	\$ III
		27-23		ļ	SAND (SP) Narrowly graded. Mostly fine to medium sand, ~40% black coal ash. FILL.			
- - 5 - - - -	S2	1-1 0-1	2	1	SAND (SP) Narrowly graded. Mostly fine to medium sand. ~30% coal ash, orange to light grey. FILL.			
- - - 10 - -	S3	1-1 1-2	2		SAND WITH GRAVEL (SP) Narrowly graded. Mostly medium sand, ~20% coal, 20% gravel, black. FILL.		FILL	
15 15 	S4	7-10 3-1	2	0.5	SAND WITH GRAVEL (SP) Narrowly graded. Mostly coarse sand, ~30% ash, <5% non-plastic fines, 25% gravel, black, brick. FILL.			
20 	S5	5-9 18-23	2	0.3	SAND WITH GRAVEL (SP) Narrowly graded. Mostly fine to medium sand, 15% angular gravel, coal slag, <5% non-plastic fines, brown and black. FILL.			
25	S6	4-7 6-7	2	1.5	SAND WITH GRAVEL (SP) Narrowly graded. Mostly fine to medium sand, ~30% subangular gravel, ~5% coal ash material, <5% non-plastic fine small lenses of black silty sand. FILL. 27.0	5,)'		
BLOWS 2.0 IN. WOR-W	OD SP EIGHT	OF RO	ON S DS	AMPL	MER FALLING 30 IN. TO DRIVE A Auger boring.			
PEN-PE REC-LE RQD-LE S-SPLIT	NETRA NGTH NGTH SPOO	ATION L OF REC OF SOL	ENGT COVE JND C PLE	H OF RED S CORE S	SAMPLER OR CORE BARREL AMPLE SECTIONS > 4 IN/LENGTH CORED. %	et Parkway	,	Φ GEI Consulta Project 98

BORING	LOCA	NON 8	73+00	1 [DATE START - FINISH8/13/98-8/13/98 UM <u>NGVD</u> DRILLED BY <u>Maine Test Boring</u>						
GROUND	WATI	ER EL.	144.	DAT	TE LOGGED E	Brian F. Jankauskas	TO	TAL DEPTH) 12.0	Page 1 of 1			
DEPTH	1	SAMP	LE				FIELD	STRATUM				
FT.	TYPE & NO.	BLOWS /6 IN.	PEN	REC	SOIL AND ROCK DESCR	IPTIONS	TESTS	DESCRIP.	Remarks			
0	S1		2	1.2	SAND WITH GRAVEL (SW) Widely graded. Mostly fine to coarse s subrounded gravel, <5% non-plastic fil	nes, brown. FILL.		FILL				
5	S2	3-5 4-5	2		SAND (SP) Narrowly graded. Mostly fine sand, <5' light brown to orange.	4.0' % non-plastic fines,	xi s	SAND				
10 10	S3	4-4 8-9	2	2	Similar to S2.	12.0'						
F					Bottom of Boring	12.0'		_				
15 15 												
20												
BLOWS PER 6 IN 140 LB. HAMMER FALLING 30 IN. TO DRIVE A 2.0 IN. OD SPLIT SPOON SAMPLER WOR-WEIGHT OF RODS WOH-WEIGHT OF RODS AND HAMMER PEN-PENETRATION LENGTH OF SAMPLER OR CORE BARREL REC-LENGTH OF RECOVERED SAMPLE												
RQD-LENGTH OF SOUND CORE SECTIONS > 4 IN./LENGTH CORED, % S-SPLIT SPOON SAMPLE SV-TORVANEQP-PENETROMETER Broad Street Parkway U-UNDISTURBED SAMPLE V GROUND WATER									Φ GEI Consultants, Inc. Project 98217			

DATE START - FINISH							B77		
ROUND ROUND	WATE	ATION :	155.9	DA1	ATUM <u>NGVD</u> DRILLED E LOGGED E	BY <u>Maine Test Boring</u> BY <u>Brian F. Jankauskas</u>	an F. Jankauskas TOTAL DEPTH (Ft.) 12.0		
PTH FT.	TYPE & NO.	SAMP BLOWS /6 IN.		REC ft.	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS"	STRATUM DESCRIP.	Remarks
0		7-12 11-9			Upper 1.2'-SAND (SP) Narrowly graded. Mostly fine sand, <5 ~10% coarse sand and fine gravel, bla	6% non-plastic fines, ack (coal). FILL. 1.2'		FILL.	
					Lower 0.3'-SAND (SP) Narrowly graded. Mostly fine sand, <5 brown.	5% non-plastic fines,			
5	S2	4-5 5-6	2	1.5	SAND (SW) Widely graded. Mostly fine to coarse <5% non-plastic fines, brown.	sand, 5% fine gravel,		SAND	
10					y ter				
=	S3	3-5 7-9	2	1.6	SAND (SP) Narrowly graded. Mostly fine sand, < br/>brown, light brown to orange.	5% non-plastic fines,	+_		
					Bottom of Boring				
15									
		E						1	
20									
25								1225	
30									
ALOWS PER 6 IN 140 LB. HAMMER FALLING 30 IN. TO DRIVE A 2.0 IN. OD SPLIT SPOON SAMPLER WOR-WEIGHT OF RODS WOH-WEIGHT OF RODS AND HAMMER PEN-PENETRATION LENGTH OF SAMPLER OR CORE BARREL						Notes: Boring advanced with	augers.	1	5
D-LEN	IGTH (IND C	ORE S	AMPLE SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	et Parkway		Φ GEI Consultants, Inc Project 98217

П

BORING				N 74	DATE STA DATUM NGVD DRILLED B			B86		
GROUNI GROUNI				DAT		BY <u>Maine Test Boring</u> BY <u>Brian F. Jankauskas</u>		TAL DEPTH)17.0		Page 1 of 1
DEPTH FT.	TYPE	SAMP BLOWS /6 IN,	LE PEN	REC	SOIL AND ROCK DESCR	MPTIONS	FIELD TESTS	STRATUM DESCRIP.		Remarks
-	S1	14-9 9-17	2		Upper 0.5'-SAND WITH GRAVEL (SP Mostly fine sand, ~30% fine round to s gravel, <5% non-plastic fines, brown. Lower 0.6'-SAND (SP) Narrowly grade Mostly medium sand, ~10% coal ash, subrounded gravel, <5% non-plastic fi	subangular FILL. ed. ~10% fine		FILL		
5 5 	S2	6-8 1-15	2		SAND (SP) Narrowly graded. Mostly medium san plastic fines, brown.			SAND		
10 10 	S3	5-6 6-11	2	1	SAND (SP) Mostly medium sand, <5% non- plastic fines, brown.					
15 15 	S4	6-10 13-12	2	NR	SAND (SP) Narrowly graded. Mostly medium san plastic fines, brown. Bottom of Boring	17.0'				
20		23				2				=
25 										
BLOWS 2.0 IN. (WOR-WI WOH-WI PEN-PEI	OD SPL EIGHT EIGHT NETRA	IT SPO OF ROD OF ROD TION LE	ON SA DS AN ENGTI	AMPLI D HAI H OF S	MMER SAMPLER OR CORE BARREL	Notes: Auger boring. NR indicates Not Reco	orded.	1	<u>.</u>	
REC-LENGTH OF RECOVERED SAMPLE										El Consultants, Inc. Project 98217

GEI Consultants, Inc.	TEST BORING LOG	PROJECT: Broad Street Parkway NUMBER: 98217 LOCATION: Nashua, NH PAGE 1 OF 1 B87
BORING LOCATION: Sta 882+00 GROUND ELEV. (NGVD): 155.9' START / FINISH DATE: 02/27/01 GW DEPTH / ELEV.: Not Encountered GW DATE / TIME: Not Encountered	TOTAL DEPTH: 17' SOIL BORING: 17' ROCK CORE: 0' DRILLED BY: MTB LOGGED BY: ALS	BLOWS PER 6 IN 140 LB. HAMMER FALLING 30 IN. TO DRIVE A 2.0 IN O.D. SPLIT SPOON SAMPLER NM - NOT MEASURED PEN - PENETRATION LENGTH OF SAMPLER OR CORE BARREL REC - RECOVERY LENGTH OF SAMPLE ROD - LENGTH OF SOUND CORES > 4 IN. / LENGTH CORED, (%)
NOTES:		S - SPLIT SPOON SAMPLE A - AUGER SAMPLE U - UNDISTURBED SAMPLE U - UNDISTURBED SAMPLE, FIXED PISTON UO - UNDISTURBED SAMPLE, OSTERBERG - MEASURED GWL - MEASURED GWL - ESTIMATED GWL

ELEV. (ft)	DEPTH (ft)	TY an NUM	ıd	SPT N per 6 in	PEN (in)	REC (in)	REMARKS	GWL	LITH.	USCS SOIL AND ROCK DESCRIPTIONS	STRATA	WELL
155		5	S1	9 20 45 16	24	20	Boring adv. using 4" SSA			0"-2" ASPHALT (not sampled) (S1) (SM) SILTY SAND WITH GRAVEL: Fine sand, ~25% subrounded gravel to 3/4", ~15% nonplastic fines, ~5% coal ash, brown to black, FILL.		
- 150	-5 —	,	52	4 5 4 4	24	15	Frozen soil 0'- ~4' Boring adv. using 5 1/4" HSA			(S2) (SW) WIDELY GRADED SAND WITH GRAVEL: ~10%-15% rounded gravel to 3/4", <5% nonplastic fines, brown, FILL.		
- 145	-10 —		S3	18 6 8 8	24	18				(S3) 0"-7" (SP-SM) NARROWLY GRADED SAND WITH SILT: Fine sand, ~10% nonplastic fines, Occasional brick fragements, brown, FILL. (S3 cont.) 7"-18" (SW) WIDELY GRADED SAND: Vaguely stratified, ~5% subrounded gravel to 1", light brown.	-10.5'	
- 140	-15		S4	5 8 10 14	24	15	B.O.B.			(S4) (SW) Similar to lower 11" of S3. ===================================	=	
- 135	-20 —											
- 130	-25 —											
— 125	-30 —											
	-35											

BORING			883	3+92 5	DATE STA	RT - FINISH 11/16/98-1 BY Maine Test Boring			B88		
GROUND GROUND				5.2 DAT		BY Brian F. Jankauskas		TAL DEPTH		Page 1 of 1	
DEPTH		SAMP	1 5			1) 12			
	TYPE		PEN	REC	SOIL AND ROCK DESCR	RIPTIONS	FIELD TESTS	STRATUM DESCRIP.		Remarks	
FT.	TYPE & NO.	8LOWS /6 IN.	2	REC ft.	SAND WITH GRAVEL (SW) Widely g	raded. Mostly fine to			1		
 	S1	7-11 12-11	2	1.0	coarse sand, 25% sub-rounded to ang		-			= 1	
					non-plastic fines, brown, FILL.	, order granding					
F			1								
 -											
								11			
									1		
⊩ ₅								FILL			
<u> </u>	S2		2	1.0	SAND (SP) Narrowly graded. Mostly	fine to medium sand,					
F		3-3			5% sub-angular gravel, <5% non-plas	tic fines, brown, FILL.					
 -									A		
				ļ					1		
				=	241				1		
⊩				ĺ	ži – ta						
L			1								
10	S3	, ,	2		SAND (SP) Narrowly graded. Mostly	fine to medium sand	Ì				
 -	33	4-1 1-2	_	1.5	SAND (SF) Narrowly graded. Mostly <5% non-plastic fines, coal, light to day	irk brown, FILL.					
					, , , , ,						
 	-	-	-		Bottom of Boring	12 <u>.0'</u>			+		
					Bottom of Boring	12.0					
			1								
- 11	$\ \ $										
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F 30	П	1									
	11		1		1	Notes:Auger 0 to 5'	1				
BLOWS F					IER FALLING 30 IN. TO DRIVE A ER	Case (driven) wash 5 to	o 12'				
WOR-WE	IGHT	OF ROD	os								
WOH-WE					MMER SAMPLER OR CORE BARREL						
REC-LEN	IGTH (OF REC	OVER	ED S	AMPLE						
RQD-LEN	NGTH (OF SOU	IND C	ORE :	SECTIONS > 4 IN./LENGTH CORED, % v-TORVANEQp-PENETROMETER	Broad Stree	t Parkwav		ΨG	El Consultants, Inc. Project 98217	
U-UNDIS				<u>V</u>	GROUND WATER	Broad Street Parkway Project 98217					

BORING LOCATION 886+21 N 16 DATE START - FINISH 11/16/98-11/16/98 GROUND ELEVATION 156.6 DATUM NGVD DRILLED BY Maine Test Boring							B89		
GROUND E GROUND W	VATE	R EL.	15	DA1	DATUM_NGVD DRILLED TE LOGGED	BY Brian F. Jankauskas		TAL DEPTH	Page 1 of 1
DEPTH		SAMP	LE		CON AND DOOK DESCR	PIOTIONS	FIELD	STRATUM	
FT.	YPE NO.	BLOWS /61N.	PEN ft,	REC ft.	SOIL AND ROCK DESCR		TESTS	DESCRIP.	Remarks
2.3	S1	13-12 11-8	2	1.1	ASPHALT SAND WITH GRAVEL (SW) Widelity of coarse sand, 25% sub-rounded to and non-plastic fines, brown, FILL.	graded. Mostly fine to gular fine gravel, <5%		ASPHALT	
- 5 - -	S2	2-2 4-3	2	0.9	SAND (SP) Narrowly graded. Mostly 10% sub-rounded to sub-angular grav fines, brown, FILL.	fine to medium sand, /el, <5% non-plastic		FILL	
10	S 3	2-3 3-3	2	1.7	SAND (SP) Narrowly graded. Mostly 5% rounded fine gravel, <5% non-pla to dark brown and orange, FILL.	fine to medium sand, stic fines, coal, light			
15					Bottom of Boring	12.0'			
20									
25				i					
-									
2.0 IN. OD WOR-WEIG WOH-WEIG PEN-PENE	SPL GHT GHT ETRA	IT SPO OF ROI OF ROI TION LE	ON S OS OS AN ENGT	AMPL ID HA 'H OF	MMER SAMPLER OR CORE BARREL	Notes:Auger 0' to 5' Case (driven) wash 5'	to 12'		
REC-LENG RQD-LENG S-SPLIT SI U-UNDISTI	OOP	OF SOU N SAMP	IND C	ORE S	AMMPLE SECTIONS > 4 IN./LENGTH CORED, % IV-TORVANEQP-PENETROMETER GROUND WATER	Broad Stree	et Parkway	,	Φ GEI Consultants, Inc Project 98217

GEI Consultants, Inc.	TEST BORING LOG	PROJECT: Broad Street Parkway NUMBER: 98217 LOCATION: Nashua, NH	PAGE 1 OF 1	BORING NUMBER		
BORING LOCATION: Sta 887+60 108S GROUND ELEV. (NGVD): 153.2' START / FINISH DATE: 03/09/01 GW DEPTH / ELEV.: Not Encountered GW DATE / TIME: Not Encountered	TOTAL DEPTH: 8.4' SOIL BORING: 8.4' ROCK CORE: 0' DRILLED BY: MTB LOGGED BY: ALS	BLOWS PER 6 IN 140 LB. HAMMER FALLING 30 IN SPOON SAMPLER NM - NOT MEASURED PEN - PENETRATION LENGTH OF SAMPLER OR COREC - RECOVERY LENGTH OF SAMPLE RQD - LENGTH OF SOUND CORES > 4 IN. / LENGTH	OR CORE BARREL			
NOTES: Boring terminated at 8.4' because of unkn	own obstruction.	S - SPLIT SPOON SAMPLE A - AUGER SAMPLE U - UNDISTURBED SAMPLE	- MEAS	, URED GWL IATED GWL		

LEV.	DEPTH (ft)	TYPE and NUMBER	SPT N per 6 in	PEN (in)	REC (in)	REMARKS	GWL	LITH.	USCS SOIL AND ROCK DESCRIPTIONS	STRATA	WELL
150	-	S1	22 22 14 10	24	20	Boring adv. using 4" SSA			0"-3 1/2" ASPHALT (not sampled) (S1) (SW) WIDELY GRADED SAND: ~5% subrounded gravel to 5/8", brown, FILL.		
145	-5 -	S2	3 1 2 2	24	16	Boring adv. using 5 1/4" HSA Suspicous obstruction encountered at 8.4'.			(S2) (SP) NARROWLY GRADED SAND: Mostly medium sand, ~5% coarse sand, <5% nonplastic fines, brown, FILL.		
	-10 —					B.O.B.			Boring terminated at 8.4'.		
140	-15 —										
135	-13										
100	-20										
- 130	-										
	-25 — -										
- 125	-30 —										
- 120	-										

$\overline{\Phi}_{ m GEI\ Consultants,\ Inc.}$	TEST BORING LOG	PROJECT: Broad Street Parkway NUMBER: 98217 LOCATION: Nashua, NH PAGE 1 OF 1 FB92
BORING LOCATION: Sla 887+72 127S GROUND ELEV. (NGVD): 153.2' START / FINISH DATE: 05/02/01 GW DEPTH / ELEV.: Not Encountered GW DATE / TIME: Not Encountered	TOTAL DEPTH: 17.0' SOIL BORING: 17.0' ROCK CORE: 0' DRILLED BY: MTB LOGGED BY: ALS	BLOWS PER 6 IN 140 LB. HAMMER FALLING 30 IN. TO DRIVE A 2.0 IN O.D. SPLIT SPOON SAMPLER NM - NOT MEASURED PEN - PENETRATION LENGTH OF SAMPLER OR CORE BARREL REC - RECOVERY LENGTH OF SAMPLE RQD - LENGTH OF SOUND CORES > 4 IN. / LENGTH CORED, (%)
NOTES:		S - SPLIT SPOON SAMPLE A - AUGER SAMPLE U - UNDISTURBED SAMPLE UF - UNDISTURBED SAMPLE, FIXED PISTON UO - UNDISTURBED SAMPLE, OSTERBERG - MEASURED GWL - ESTIMATED GWL

ELEV. (ft)	DEPTH (ft)	TYPE and NUMBE	SPT N per 6 in		REC (in)	REMARKS	GWL	LITH.	USCS SOIL AND ROCK DESCRIPTIONS	STRATA	WELL
150	-	A1	nm	nm	nm	Boring adv. using 4" SSA		14444A	0"-3" ASPHALT (not sampled). (A1) NARROWLY GRADED SAND: Medium sand, ~5% subrounded gravel to 3/4", dark brown, FILL (description based on auger cuttings).		
	-5 — -	S1	3 5 7 8	24	20	Boring adv. using 5 1/4" HSA			(S1) 0"-6" WIDELY GRADED SAND: ~5% subrounded gravel to 3/8", FILL. (S1 cont.) 6"-20" (SP) NARROWLY GRADED SAND WITH SILT: Stratified, -10% nonplastic fines, light brown.	5.5'	
145	-		8								
440	-10 — -	S2	4 5 6 5	24	24				(S2) (ML) SANDY SILT: Stratified, ~25% to 35% nonplastic fines, light brown to olive.		
140	-15 — -	S3	5688	24	16				(S3) (SP) NARROWLY GRADED SAND: Stratified, fine sand, light brown, olive, orange.		
135			8			B.O.B.		0000	Boring terminated at 17.0'		
130	-20 — —										
130	-25 —										
125											
	-30 — -										
120	-	1									1

BORING GROUND				38+30 6.6	N 14 DATE STA	RT - FINISH 11/16/98- BY Maine Test Boring	11/16/98			B93
GROUND				DAT	E LOGGED	BY Brian F. Jankauskas		TAL DEPTH		Page 1 of 1
DECTU		04145) 12.0		Tage Tol T
DEPTH	TYPE	SAMP	PEN	REC	SOIL AND ROCK DESCR	RIPTIONS	FIELD TESTS	STRATUM DESCRIP.	l -	Remarks
FT.	å NO.	/61N.	ft.	ft.	Lucia di Carina (CD) N	I. d. Marahi, Sara ta	12010	D200/		
F	S1	5-8 8-5	2	0.9	Upper 0.7' - SAND (SP) Narrowly grac medium sand, 5% angular fine gravel, light brown, FILL.	<5% non-plastic fines, 1.5'		FILL		
F	H .				Lower 0.2' - SAND (SP) Narrowly grad medium sand, <5% non-plastic fines,					
L					medicin sand, 45% non-placed intes,	orango, or own.				
F.										-
L								SAND		
├ ─_ ⁵	S2	5-5	2	1.3	Upper 0.9'- SAND WITH SILT (SP-SN	Narrowly graded.	ļ	AND SAND		
		9-22	-		Mostly fine sand, 10% non-plastic fine			WITH		
 -					gravel, light brown. Lower 0.4' - SAND WITH GRAVEL (S	W) Widely graded.		SILT		
					Mostly fine to coarse sand, 20% sub-r	ounded to sub-				
<u> -</u>					angular gravel, 5% non-plastic fines, i	ignt brown.				
E		ĺ			22					
10					Upper 0.7' - SAND (SP) Narrowly grad	ded. Mostly fine sand,				
	S3	18-12 21-19		1.2	5% non-plastic fines, light brown. Lower 0.5'- SAND (SW) Widely grade	d. Mostly fine to coarse				
L		21-19			sand, 10% sub-rounded gravel, 5% no	on-plastic fines, brown.				T
F	H			_	Bottom of Boring	12.0'				
E a					Bottom of Coming	14.0				
-		1								
	П						1			
15										
 -										
E					i i				-	
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F	П						1			
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F				1					11	
30										
1					ER FALLING 30 IN. TO DRIVE A	Notes:Auger 0 to 5' Case (driven) wash 5'	to 12'			1
2.0 IN. 0				AMPL	ER	Case (univen) wasii 3	10 IZ			
WOH-WE	EIGHT	OF ROD	S AN		MMER SAMPLER OR CORE BARREL					
REC-LEN	IGTH (OF REC	OVER	ED S	AMPLE				Φ.Ο.	El Conquitorio In-
RQD-LEN					SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER	Broad Stree	t Parkway			El Consultants, Inc. Project 98217
U-UNDIS					GROUND WATER					

BORING L BROUND BROUND	ELEV.	ATION	15	+65 N 6.2 DAT	DATUM NGVD DRILLED B	RT - FINISH <u>9/298-9/2/</u> IY <u>Maine Test Boring</u> IY <u>Brian F. Jankauskas</u>	TO	OTAL DEPTH Page 1 of 2		
EPTH	D/DE	SAMP		REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks	
FТ. 0	TYPE & NO.	1-2 2-3	2	1.2	Top 0.6' - TOPSOIL Bottom 0.6' - SAND (SP) Narrowly graded. Mostly fine sand, <5 fines, orange/brown.	0.6' % non-plastic		TOPSOIL		
_5	S2	10-17 19-18	2		SAND (SP) Narrowly graded. Mostly fine to mediu plastic fines, brown.	nm sand, <5% non-	1			
10	S3	11-12 14-16		0.9	Top 0.1' - SILT (ML) Rapid dilatency, low toughness, low pl Bottom 0.8' - SAND (SP) Narrowly graded. Mostly medium san plastic fines, brown.					
15	S4	11-13 17-17	2	0.8	SAND (SP) Narrowly graded. Mostly medium san plastic fines, brown.	d, <5% non-		SAND		
20	S5	11-14 18-22		0.8	SAND (SP) Narrowly graded. Mostly medium san plastic fines, brown.	d, <5% non-				
25 	S6	13-16 19-20		0.6	SAND (SP) Narrowly graded. Mostly fine sand, < fines, brown, with light brown and ora			ii i		
2.0 IN. (WOR-WI WOH-WI PEN-PEI	OD SP EIGHT EIGHT NETRA	LIT SPC OF ROI OF ROI TION LI	ON S OS OS AN ENGT	AMPL ID HA 'H OF	MMER SAMPLER OR CORE BARREL	Notes: Cased (driven) wash b	poring.			
REC-LEI RQD-LEI S-SPLIT U-UNDIS	NGTH SPOC	OF SOL	JND C	ORE	SAMPLE SECTIONS > 4 IN./LENGTH CORED, % SV-TORVANE Qp-PENETROMETER // GROUND WATER	Broad Stree	et Parkway	/	Φ GEI Consultants, Inc Project 98217	

ORING BROUND	LOCA	TION _	80 15	+65 N	27 DATE ST DATUM NGVD DRILLED	ART - FINISH <u>9/2/98-9/2</u> BY <u>Maine Test Boring</u>	2/98		B501
ROUND	WAT	ER EL.		DA		BY Brian F. Jankauskas		TAL DEPTH) 31.7	Page 2 of 2
EPTH FT.	TYPE & NO.	SAMP BLOWS /6 IN.		REC ft.	SOIL AND ROCK DESC	RIPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
30		8-11 25/0.4	1.4		SAND (SP) Narrowly graded. Mostly fine sand, brown, slight orange lines running thr	ough the sample. 31.4'			Fractured gravel lodged in tip of spoon
		ļ	-	-	Possible Bedrock or Boulder Bottom of Boring	31.7'	ø II - 1	Bedrock_	Roller bit to 31.7'
					20		1	1	
_35									
	Ш				¥ 8				
40									
_ ⁴⁰									l l
	Ш.				1				
_45									
					8 18				
50					0				1
	٠,						18		
							1		
_55									
		55							
60						T Notos			
2.0 IN. C	OD SPI	IT SPO	ON S		ER FALLING 30 IN. TO DRIVE A ER	Notes:			
VOH-WE	EIGHT	OF ROD	S AN						
EC-LEN	NGTH (OF REC	OVER	RED S					# OF C
-SPLIT	SPOO	N SAMP	LE	S	SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER	Broad Stree	t Parkway		Φ GEI Consultants, Inc. Project 98217
-UNDIS	TURB	ED SAM	PLE	V	GROUND WATER				

S1 2-6 2 1.5 1	RING LOC OUND EL	EVA	TION	156	+23 S .5	DATUM NGVD DRILLED B	RT - FINISH 9/1/98-9/2 Y Maine Test Boring		TAL DEDTIL		B502
S1 2-6 2 1.5 Top. 0.6" Top. 0.	W DNUC	ATE	REL.	127	<u>'.1</u> [DATE <u>9/10/98</u> LOGGED B	Y <u>Brian F. Jankauskas</u>				Page 1 of 2
S1	TH TYF	E		PEN	REC ft.	SOIL AND ROCK DESCRI	PTIONS				
S2 3-2 2 0.6 SAND (SW) Well graded. Mostly widely graded sand, 1½" ID PVC well riser from 0"-21".			2-6		1.5	Bottom 0.9' - SAND (SP) Narrowly graded. Mostly fine sand, <5	% non-plastic fines,		TOPSOIL		surface seal.
S3 12-9 2 0.9 SAND (SW) Well graded. Mostly widely graded sand,											
S3 12-9 2 0.9 SAND (SW) Well graded. Mostly widely graded sand,		52		2	0.6	Well graded. Mostly widely graded sa	nd,				well riser from
S4 11-16 2 2 0.8 SAND (SP) Narrowly graded. Mostly fine to medium sand, <5% non-plastic fines, brown. S5 13-16 2 0.9 SAND (SP) Narrowly graded. Mostly medium sand, <5% non-plastic fines, brown. Bentonite seal from 18.4' to 19. S6 13-17 2 0.1 SAND (SP) SAND (SP) Narrowly graded. Mostly medium sand, <5% non-plastic fines, brown.				2	0.9	Well graded. Mostly widely graded sa	nd,				
S5 13-16 2 0.9 SAND (SP) Narrowly graded. Mostly medium sand,				2	0.8	Narrowly graded. Mostly fine to medic	ım sand,		SAND		
well screen from 21' to 31'					0.9	Narrowly graded. Mostly medium san	d,				from 18.4' to 19.7
Narrowly graded. Wosay life to Healdh Sand,			13-17 17-20		0.1	SAND (SP) Narrowly graded. Mostly fine to media	⊔m sand,	į.			well screen from 21' to 31'
IN. OD SPLIT SPOON SAMPLER	R-WEIGI H-WEIGI I-PENET C-LENGT	HT (HT (RA1 H ()	OF ROD OF ROD TION LE OF REC	OS OS AN ENGT OVEI	ND HA TH OF RED S CORE	MMER SAMPLER OR CORE BARREL	Cased (driven) wash b			Φ (GEI Consultants, In Project 98217

BORING				+23 S	10 DATUM NGVD		ART - FINISH BY Maine Test Bo	7/30/98-7/	31/98			B502
GROUNE					DATE 9/10/98		BY <u>Brian F. Jank</u>			TAL DEPTH) 36.3		Page 2 of 2
DEPTH	TVDE	SAMP		DEC	SOIL A	AND ROCK DESCR	RIPTIONS		FIELD TESTS	STRATUM DESCRIP.		Equipment Installation
FT.	TYPE & NO.	BLOWS /6 IN.		REC ft.				200	15313	DESCRIF.		matallation
_ 30	2	10-12 25/0.1			SAND (SP) Narrowly plastic fines, brown,	Graded. Mostly 1/8" dark brown la	nne sand, <5% ayer near the e	non- nd of the	W=1		18	
F	R1	4 min		4.3	split spoon GRANITE			31.1'				
-	ı	3 min			Fresh to slightly weat	thered with fractu	res dipping at	0, 45,				
		2 min			and 60 degrees from apart. RQD=76.7%	the horizontal, s	paced from 1" i	to 19"		Bedrock		
 -	1	3 min			apan. RQD=76.7%							5
35	Ĭ	6 min										
		8 min										Cuttings from
			H		P.	ottom of Boring	36 3'	36.3'			F	35.6' to 36.3'
E					,	ottom or boring	00.0		1.			= # <u></u>
F												
⊩	Ш			-								
F	Ш									1		
40									;			
F												-
\vdash	Н	=							1			-
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F												
60												
BLOWS	PER 6	N 140	LB. F	IAMM	ER FALLING 30 IN. TO	DRIVE A	Notes:					
2.0 IN. 0	D SPL	IT SPO	ON SA									
WOH-WE	IGHT	OF ROD	S AN									.
PEN-PEN REC-LEN					SAMPLER OR CORE BA	ARREL						
RQD-LEN	IGTH	OF SOU	ND C	ORE S	SECTIONS > 4 IN./LENG		P	and Change	Dorland		ΦGE	El Consultants, Inc.
S-SPLIT U-UNDIS					/-TORVANE Qp-PEN GROUND WATER	NETROMETER	Bro	ad Street	raikway			Project 98217

BORING L GROUND				+82.5	5.72 DATE START - FINISH 8/3* DATUM NGVD DRILLED BY Maine Test Boring	1/98-9/1/98		B503
GROUND	WATE	R EL.		DAT	E LOGGED BY Brian F. Jankausk	as ·	Ft.) <u>57.7</u>	Page 1 of 2
DEPTH FT.	TYPE & NO.	SAMP BLOWS /6 IN.	PEN	REC	SOIL AND ROCK DESCRIPTIONS	FIELD TESTS		Remarks
0 0.2 2.2 2.2 5	S1	2-6 5-6	2		Brick Sidewalk 0-0.2' Top 0.5'- SAND (SP) Narrowly graded. Mostly fine to me sand, <5% non-plastic fines, light brown. FILL Bottom 0.8'- SAND (SP) Narrowly graded. Mostly fine sand, <5% non-plastic fine dark brown. FILL	= =	FILL	
5 	S2	1-4 6-7	2	1	SAND (SP) Narrowly graded. Mostly medium sand, <5% non-plastic fines, brown. FILL			
10	S3	10-12 14-16	2	1	SAND (SP) Narrowly graded. Mostly medium sand, <5% non-plastic fines, brown.	~8'		
15 15	S4	13-18 18-17	2	0.7	SAND (SP) Narrowly graded. Mostly medium sand, <5% non-plastic fines, brown.	C	SAND	
20	S5	12-17 18-18		0.8	SAND (SP) Narrowly graded. Mostly medium sand, <5% non-plastic fines, brown.	С		
25	S6	15-14 16-22		0.8	SAND (SP) Narrowly graded. Mostly medium sand, <5% non-plastifines, brown.	С		
2.0 IN. 0 WOR-WE WOH-WE PEN-PEN	DD SPI EIGHT EIGHT NETRA	IT SPO OF ROI OF ROI TION LI	ON S OS OS AN ENGT	AMPL ID HA H OF	MMER SAMPLER OR CORE BARREL	vash boring.		
REC-LEN RQD-LEN S-SPLIT U-UNDIS	NGTH SPOO	OF SOL N SAMP	IND C	ORE	SECTIONS > 4 IN./LENGTH CORED. %	Street Parkv	vay	Φ GEI Consultants, Inc. Project 98217

BORING			15	881 6.2		RT - FINISH <u>8/31/98-9/</u> BY <u>Maine Test Boring</u>	1/98	_		B503
GROUND						Brian F. Jankauskas		TAL DEPTH) <u>57.7</u>		Page 2 of 2
DEPTH FT.	TYPE & NO.	SAMP BLOWS / 6 IN.	LE PEN	REC ft.	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.		Remarks
30		20-26 25-28	2		SAND (SW) Widely graded. Well graded sand, <5' top 0.6 orange, bottom 0.3 darker brov		: 1			
	S8	13-16 18-21	2	0.9	SAND (SP) Narrowly graded. Mostly medium sand <5% non-plastic fines, brown.	d,		SAND		
40 40	S9	9-11 20-31	2	0.9	Top 0.3'- SAND (SP) Narrowly graded <5% non-plastic fines, brown. Bottom 0.6'- SAND (SP) Narrowly grad <5% non-plastic fines, brown, angular	ded. Mostly fine sand,	2 1 1			
45 45 	S10	23-57 89-30 /0.1	1.6	0.8	SAND WITH GRAVEL (SP) Narrowly graded. Mostly fine to mediu 15% subrounded to angular fine grave <5% non-plastic fines, brown. Glacia	١,	1 1	GLACIAL TILL		
50	R1	4 min 3 min 3 min 4 min		4.5	GRANITE Fresh to slightly weathered, fractures and 80 degrees from the horizontal spapart. RQD=60.5% No water return while coring.	dipping at 0, 20, 45, aced from 2" to 15"		BEDROCK		
53.2 55 55		4 min 6 min 6 min 6 min 3 min		4.2	GRANITE Fresh to slightly weathered, fractures 50, and 70 degrees from the horizonta 18.5" apart. RQD=68.9% No water return while coring.	dipping at 10, 30, 45, al spaced from 1" to				
57.7 - - - - - - - - - - - - - - - - - -		3 min			Bottom of Boring 5	57.7'				
BLOWS I 2.0 IN. (WOR-WE WOH-WE PEN-PEN	DD SPL EIGHT EIGHT NETRA	IT SPOO OF ROD OF ROD TION LE	ON SA S AN NGTI	D HAI	MMER SAMPLER OR CORE BARREL	Notes:			-	
REC-LEN RQD-LEN S-SPLIT U-UNDIS	NGTH (SPOO!	OF SOU	ND C	ORE S	AMPLE SECTIONS > 4 IN./LENGTH CORED, % /-TORVANE	Broad Street	t Parkway			El Consultants, Inc. Project 98217

ORING L	OCAT	ION _	879 156	+15 N	121 DATE STA TUM NGVD DRILLED E	RT - FINISH 8/18/98-8 BY Maine Test Boring	3/18/98	_	B504
ROUND	WATE	R EL.		DAT	TE LOGGED E	Brian F. Jankauskas		TAL DEPTH .) 42.1	Page 1 of 2
PTH FT.	TYPE	SAMP	PEN	REC ft.	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
0	S1	76 IN. 1-3	2		Upper 0.3' TOPSOIL	0.3'			
		4-6			Lower 1.1' SAND (SP) Narrowly graded. Mostly fine to medium sand, ~5% fine subrounded g fines, brown. FILL.	ravel, ~5% non-plastic		FILL	
5	S2	8-6 6-6	2	0.6	SAND (SP) Narrowly graded. Mostly fine to medit ~5% fine subrounded gravel, <5% nor dark brown. FILL.	im sand, n-plastic fines,			
					¥ ¥				
_10	S3	9-8 9-9	2	0.7	SAND (SP) Narrowly graded. Mostly fine to mediu ~5% fine subrounded gravel, <5% nor brown.	um sand, n-plastic fines,	41		
_15	S4	11-15 18-20		0.7	SAND (SP) Narrowly graded. Mostly fine to mediraction of the country of the count	um sand, astic fines,		SAND	
20	S5	24-28 32-25	2	0.2	SAND (SP) Narrowly graded. Mostly fine to medi <5% non-plastic fines, brown.	um sand,		1 To 1 To 1 To 1 To 1 To 1 To 1 To 1 To	
_25	S6	20-20 18-18		0.4	SAND (SP) Narrowly graded. Mostly fine to medical common c				
		IN 140			MER FALLING 30 IN. TO DRIVE A	Notes:			
OR-WE OH-WE EN-PEN EC-LEN	EIGHT EIGHT NETRA IGTH	OF ROI OF ROI TION LI OF REC	OS OS AN ENGT OVER	ND HA 'H OF RED S	AMMER SAMPLER OR CORE BARREL SAMPLE	Cased (drive) wash bo	oring.		4.051.0
REC-LENGTH OF RECOVERED SAMPLE RQD-LENGTH OF SOUND CORE SECTIONS > 4 IN./LENGTH CORED, % S-SPLIT SPOON SAMPLE Sv-TORVANE Qp- PENETROMETER U-UNDISTURBED SAMPLE V GROUND WATER D-UNDISTURBED SAMPLE V GROUND WATER PO GEI Consultants, Inc. Project 98217					SECTIONS > 4 IN./LENGTH CORED, %	Broad Stree	et Parkway	y	Φ GEI Consultants, Inc Project 98217

	LOCATION DELEVATION	879	9+15 N 56.4	21 DATE STA DATUM NGVD DRILLED B	RT - FINISH <u>8/18/98-8</u> BY <u>Maine Test Boring</u>	/18/98	-	B504
	WATER E	Ľ. <u> </u>	JU.4	DATE LOGGED	BY Brian F. Jankauskas		TAL DEPTH)42.1	Page 2 of 2
DEPTH		MPLE	REC ft.	SOIL AND ROCK DESCR	RIPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
FT. 30	S7 21- 21-	20 2		SAND (SP) Narrowly graded. Mostly fine to medit <5% non-plastic fines, brown.	um sand,			
	S8 17- 25-		0.8	SAND (SP) Narrowly graded. Mostly fine sand,			SAND	
				<5% non-plastic fines, brown.		10	-	5
40	S9 56- 41-		0.9	SAND WITH GRAVEL (GW) Widely gooarse sand, 30% fine subrounded to <5% non-plastic fines, brown.	subangular gravel, 42.1'		GLACIAL TILL	Refusal of Casing
45 50 55				Bottom of Boring 4 Possible Bedro				
2.0 IN. 0 WOR-W WOH-W PEN-PEI	OD SPLIT S EIGHT OF F EIGHT OF F	POON S RODS RODS AI I LENGT	SAMPL ND HA TH OF	MMER SAMPLER OR CORE BARREL	Notes:			
RQD-LE S-SPLIT		OUND (CORE S	AMPLE SECTIONS > 4 IN./LENGTH CORED, % v-TORVANEQp-PENETROMETER GROUND WATER	Broad Stree	t Parkway		Φ GEI Consultants, Inc. Project 98217

ORING L ROUND	ELEV	ATION	157.4		DATUM NGVD DRILLED B	RT - FINISH <u>8/28/98- 8</u> IY <u>Maine Test Boring</u>			B505
ROUND	WATE	R EL.	125.	6	DATE 9/10/98 LOGGED E	Brian F. Jankauskas		TAL DEPTH) 38.1	Page 1 of 2
PTH	TYPE	SAMP	PEN	REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
0	S1	2-2 2-3	2	ft.	Upper 0.3' - TOPSOIL Lower 0.7' - SAND (SP) Narrowly graded. Mostly fine sand, <5% non-plastic fines, yellow/brown. I	0.3'			Locking standpipe in 0.5' concrete surface seal.
_5	S2	5-7 9-11	2	0.8	SAND (SP) Narrowly graded. Mostly medium sandes <5% non-plastic fines, brown. FILL.	d,			2.2' Stickup on standpipe. 1-1/2" ID PVC well riser. Backfill with sand from 0.5' to 25.0',
10	S3	13-12 14-15	2	0.8	Similar to S2.			FILL	
_15	S4	16-19 19-21	2	0.8	Upper 0.7' - Similar to S2, FILL. Lower 0.1' - SAND (SP) Narrowly graded. Mostly fine sand, <5% non-plastic fines. Light brown. S	~16.5			
_20	S5	23-20 24-27		0.9	Upper 0.2' Similar to S2. Lower 0.7' SAND (SP) Narrowly graded. Mostly fine sand, < light brown, slightly stratified.	5% non-plastic fines,			
_25	S6	17-21 25-26		1.0	SAND (SP) Narrowly graded. Mostly fine sand, < plastic fines, light brown. Slightly stra	5% non- tified.		SAND	Bentonite seal from 25.0' to 26.3 Backfill with sand from 26.3' to 38.1
.0 IN. C OR-WE OH-WE EN-PEN	D SPI EIGHT EIGHT NETRA	LIT SPO OF ROI OF ROI	ON S. DS DS AN ENGT	AMPL 1D HA 1H OF	MMER SAMPLER OR CORE BARREL	Notes: Cased (driven) wash b	oring.		
QD-LEN -SPLIT :	NGTH SPOO		IND C	ORE S	SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway	,	Φ GEI Consultants, Inc Project 98217

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BORING	LOCA	TION _	879 157.4	9+88 5		RT - FINISH <u>8/28/98-8/</u> BY <u>Maine Test Boring</u>	/28/98	_		B505
GROUNE	WAT	ER EL.	125.6	5 0	ATE 9/10/98 LOGGED	BY Brian F. Jankauskas		TAL DEPTH)38.1		Page 2 of 2
DEPTH		SAMP	LE			NOTIONS	FIELD	STRATUM		
FT.	TYPE & NO.	BLOWS /6 IN.	PEN ft.	REC ft.	SOIL AND ROCK DESCR	RIPTIONS	TESTS	DESCRIP.		Remarks
30		11-12 15-15	2		SAND (SP) Narrowly graded. Mostly fine sand, brown.	5% non-plastic fines,		SAND		1-1/2" ID slotted PVC well screen from 27.5' to 37.5'.
35 35 	S 8	7-7 12-17	2	1.0	Upper 0.7'- SAND (SP) Narrowly grad sand, <5% non-plastic fines, brown. Lower 0.3'- SAND (SP) Narrowly grad ~5% non-plastic fines, light brown. Glacial Till	ed. Mostly fine sand, 37.5' 38.0'		TILL BEDROCK?		
F	#-				Roller bit boulder or possible bedrock Bottom of Boring	<u>тот 38.0' to 38.1'</u> 38.1'		BEURUCK?	CO 188	
40										
45					П		- , ,			=
										oss M
								i i		=
50 										
55					П		×1			
60										
2.0 IN. 0 WOR-WI WOH-WI PEN-PEN REC-LEN	DD SPI EIGHT EIGHT NETRA NGTH (IT SPO OF ROD OF ROD TION LE	ON SA DS AN ENGTI OVER	D HAI H OF S	MMER SAMPLER OR CORE BARREL AMPLE	Notes:				1
RQD-LEI S-SPLIT U-UNDIS	SPOO	N SAMP	LE	S	SECTIONS > 4 IN./LENGTH CORED, % /-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway		Ф GI	El Consultants, Inc. Project 98217

GROUND	WATE	ATION ER EL.	153.	DAT	TUM NGVD DRILLED BY Maine Test Boring LOGGED BY Brian F. Jankauskas		TAL DEPTH	Page 1 of
DEPTH FT.	TYPE & NO.	SAMP BLOWS /6 IN.	LE PEN	REC ft.	SOIL AND ROCK DESCRIPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
0	S1	1-2 3-3	2	0.3	SAND WITH GRAVEL (SW). Widely graded. Mostly fine to coarse sand, 20% fine subrounded gravel. <5% non-plastic fines, brown. FILL. Upper 0.2' - SAND (SW) Widely graded. Mostly fine to		FILL	
5 	S2	3-2 3-5	2	0.6	coarse sand, <5% non-plastic fines, brown. FILL 5.2 Lower 0.4' - SAND (SP) Narrowly graded. Mostly fine sand, <5% non-plastic fines, light brown.			
	S 3	10-10 10-11		0.8	SAND (SP). Narrowly graded. Mostly fine sand, <5% non-plastic fines, light brown.		SAND	
	S4	12-12 12-14	2	0.8	Similar to S3.			
20	S5	11-12 13-14		0.8	Similar to S3.			
25	S6	14-15 15-20		0.8	Similar to S3.			
30 BLOWS I					MER FALLING 30 IN. TO DRIVE A Notes:			
WOR-WE WOH-WE PEN-PEN REC-LEN	EIGHT EIGHT NETRA NGTH (OF ROI OF ROI TION LI OF REC	DS DS AN ENGT OVER	ID HA H OF RED S	MMER SAMPLER OR CORE BARREL	oring.		Φ GEI Consultar

BORING	LOC	ATIO	N	880)+64 5	DATE STA	RT - FINISH <u>8/17/98-8</u> BY Maine Test Boring	17/98	_		B506
GROUNI) ELE	TER	EL.	153.2	DAT		BY Brian F. Jankauskas		TAL DEPTH		Page 2 of 2
DEPTH			SAMPL		REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.		Remarks
FT. 30	TYP & NO		ows 6 IN. 5-21		ft.	SAND (SP).		12010	220011111		
	$\ $	19	9-20	~		Narrowly graded. Mostly fine to medic	ım 	ļ	SAND	1	
 -						sand, <5% non-plastic fines, light brov	/n.		SAND		
							33.0'				
E	R		min	5		GRANITE Fresh to slightly weathered, fractures					
\vdash	200	9	min min		1	to 41" apart. Fractures dipping at 0, 1	0, and 45 degrees		·		
35	1000) min) min			from the horizontal. RQD=93%.					
									BEDROCK		
-	S. Adding.	1									=
F	F) min min	4.8		GRANITE Fresh to slightly weathered, fractures	spaced from 1/2"				
		h1	l min			to 20" apart. Fractures dipping at 0, 1 from the horizontal. RQD=88%.	5, and 40 degrees				
F_40		15	min min		-	from the nonzontal. RQD=66%.			1		
F		/	0.8								
	and a	_				D. Harris D. Jacob	42.8				
H	$\ $					Bottom of Boring	12.8				-
45											
E											
-											
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50											. =
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60				1			I Notes	1	<u> </u>	<u> </u>	<u> </u>
BLOWS 2.0 IN.						MER FALLING 30 IN. TO DRIVE A LER	Notes:				
WOR-W	EIG	IO Th	FROE	os							•
PEN-PE	NET	RATI	ON LE	ENGT	H OF	SAMPLER OR CORE BARREL SAMPLE			= -		
	NGT	H OF	SOU	IND C	ORE	SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER	Broad Stree	et Parkwav	.	ΦGI	El Consultants, Inc. Project 98217
U-UNDI	STU	RBEC	SAM	IPLE		GROUND WATER					

ORING L ROUND ROUND	ELEV.	ATION	<u>NM</u>		DATUM NGVD DRILLED	RT - FINISH 11/18/98 - BY <u>Maine Test Boring</u> BY <u>Brian F. Jankauskas</u>	то	TAL DEPTH	B601 Page 1 of 2
EPTH		SAMP	l F				FIELD	30.5 STRATUM	
L	TYPE & NO.	BLOWS	PEN	REC ft.	SOIL AND ROCK DESCR	RIPTIONS	TESTS	DESCRIP.	Remarks
	S1	1-1 5-4	2		SAND (SP) Narrowly graded. Mostly to 10% rounded fine gravel, <5% non-plates asphalt, FILL.	fine to medium sand, astic fines, brown,			
_5						L. I. Marth. San		FILL	
	S2	10-17	1.0	0.4	SAND WITH GRAVEL (SP) Narrowly sand, 20% fine angular gravel, 5% nor roots, FILL.	graded. Mostly fine n-plastic fines, brown,			
10						10'			
10	S3	12-9 9-12	2	0	resample R=0.0', no sample				
15	S4	11-15 17-13		0.1	SAND (SP) Narrowly graded. Mostly plastic fines, brown.	fine sand, 5% non-		SAND AND	Pushing a rock
20						500 and 500 and		GRAVEL WITH SAND	
	S5	13-22 22-10		0.4	SAND (SP) Narrowly graded. Mostly plastic fines, 10% angular gravel, brown	ine sand, 5% non- wn, roots.			
25	S6	6-10 12-15	2	0	SAND (SP) Narrowly graded. Mostly <5% non-plastic fines, brown.	fine to medium sand,			
· •					resample R=0.1'				
30						L Notes The As = 0.4	a dua aut	to set us the	drill rio
2.0 IN. O VOR-WE VOH-WE	D SPI IGHT IGHT ETRA	IT SPO OF ROI OF ROI TION LI	ON S OS OS AN ENGT	AMPL ID HA H OF	MMER SAMPLER OR CORE BARREL	Notes: The top 3 ft wa Augered the fir Case (driven)	st 5 ft		ariii rīg.
	GTH SPOO	OF SOL N SAMF	IND C	ORE S	AMM/LE SECTIONS > 4 IN./LENGTH CORED, % IV-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway	′	Φ GEI Consultants, In Project 98217

BORING	LOCAT	ION 8	77+94	S 110	6 DATUM_NGVD_	DATE STA	RT - FINISH 11/18/98 - 3Y Maine Test Boring	11/18/98			B601
GROUNE GROUNE	WATE	R EL.	4141	DAT	TE	LOGGED	BY Brian F. Jankauskas		TAL DEPTH) _30.5		Page 2 of 2
DEPTH		SAMP	LE					FIELD	STRATUM		· · · · · · · · · · · · · · · · · · ·
FT.	TYPE & NO.	BLOWS /6 IN.	PEN ft.	REC ff	SOIL AND RO	OCK DESCR	RIPTIONS	TESTS	DESCRIP.		Remarks
L	S7	100	0.3	0.1	GRAVEL WITH SAND (GP) Narrowly	graded. Mostly angular				Rolled for 20 min
F					fine gravel, 25% medium to fines, gray-brown.	coarse sa	nd, <5% non-plastic 30.5'			1	0.2'
 -					Bottom	of Boring 3	30.5'	1			
H											
├ 5											
⊩											- 1
E											
 -											
E					2						
F					10 8						
10		-									=
		2.4									
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30	Ц.,	<u> </u>	<u>l </u>	<u> </u>			Notes:			<u> </u>	
2.0 IN. C	D SPL	IT SPO	ON SA		IER FALLING 30 IN. TO DRIVE ER	A	140165.				
WOR-WE	EIGHT (OF ROD	S								
WOH-WE					MMER SAMPLER OR CORE BARREL						
REC-LEN	IGTH C	F REC	OVER	ED S/						ФС	El Consultants, Inc.
S-SPLIT	SPOON	SAMP	LE	Sv	v-TORVANE Qp-PENETRO		Broad Stree	t Parkway		<i>-</i> 0	Project 98217
U-UNDIS	TURBE	D SAM	PLE	<u>V</u>	GROUND WATER						-

ORING L	OCAT	ION 87	76+00	S 11	DATE STA	RT - FINISH 11/19/98 -	11/19/98		B603
ROUND	WATE	R EL.	NM	DAT	DATUM NGVD DRILLED E LOGGED E	3Y <u>Maine Test Boring</u> 3Y <u>Brian F. Jankauskas</u>		TAL DEPTH) 32.0	Page 1 of 2
EPTH	TYPE & NO.	SAMP	PEN	REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
FT.	S1	5-12 6-3	2	0.3	SILTY SAND (SM) Narrowly graded. N ~20% non-plastic fines, black, small p	Mostly fine sand, ieces of brick.			
_5	S2	1-1	2	0.2	GRAVEL WITH SAND (GP) Narrowly rounded to sub-angular gravel, ~30% 5% non-plastic fines, black, coal ash.	graded. Mostly fine to medium sand,		FILL	
_10	S 3	2-1 2-1	2	0.4	SAND (SP) Narrowly graded. Mostly 5% non-plastic fines,<5% coal, brown	fine to medium sand,			
_15	S4	3-2 3-2	2	0	SAND WITH GRAVEL (SP) Narrowly to medium sand, 15% rounded gravel brown.			SAND AND	Resample R=1.3
_20	S5	5-5 6-7	2	0.5	SAND (SP) Narrowly graded. Mostly 5% non-plastic fines, brown.	fine sand,		SAND WITH GRAVEL	
_25	S6	7-10 13-15	2	0.5	SAND (SP) Narrowly graded. Mostly plastic fines, brown.	fine sand, 5% non-			
2.0 IN. C OR-WE	DD SPL EIGHT EIGHT	IT SPO OF ROI OF ROI	ON S. DS DS AN	AMPL ID HA		Notes: Augered the fi Case (driven)	rst 5 ft wash from	5 to 32 ft	
EC-LEN QD-LEN -SPLIT (IGTH (IGTH (SPOO!	OF REC	OVEF IND C PLE	RED S ORE S	SAMPLE SECTIONS > 4 IN./LENGTH CORED, % V-TORVANE QP-PENETROMETER GROUND WATER	Broad Stree	et Parkway	,	Φ GEI Consultants, Inc Project 98217

BORING GROUN	LOCA	TION 8	76+00	S 11	2 DATE STA DATUM <u>NGVD</u> DRILLED (RT - FINISH 11/19/98 3Y Maine Test Boring	- 11/19/98		B603
GROUN	D ELEV	ER EL.	INIVI	DAT	E LOGGED	BY Brian F. Jankauskas		TAL DEPTH) _32.0	Page 2 of 2
DEPTH FT.	TYPE & NO.	SAMP BLOWS /6 IN.		REC ft.	SOIL AND ROCK DESCR	RIPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
	S7	6-10	2	0.6	SAND WITH SILT (SP_SM) Narrowly	graded. Mostly fine			
L		14-19			sand, 10% non-plastic fines, brown.				
F	-	-	-		Bottom of Boring 3	32.0 ^t			
l									
 -	11								
5									
									4.2
\vdash	Ш							1	
F			1						-1
 -	11 4	1			38 043				
10									
F-10									
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L									
15					8				
F	Ш								
				-					
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F		1						24	
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E					= =,			1	
E									
F	-								
-									
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E					9				
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F							1		
E									
 -									JI.
30		<u> </u>		<u> </u>		I Niston		<u> </u>	
		IN 140 LIT SPC			MER FALLING 30 IN. TO DRIVE A LER	Notes:			
	VEIGHT	OF ROI	DS						- N
PEN-PE	NETR/	ATION L	ENGT	H OF	SAMPLER OR CORE BARREL				2.
RQD-LE	ENGTH	OF SOL	JND C	ORE	SAMPLE SECTIONS > 4 IN./LENGTH CORED, %	D===4.04	t Desley		Φ GEI Consultants, Inc.
S-SPLI U-UND		N SAMF			V-TORVANEN QP-PENETROMETER GROUND WATER	Broad Stree	. гагкwау		Project 98217

	NG LOCATION 560+96; Lt 23' DATE START - FINISH 10/22/98 - 10/26/98 UND ELEVATION 150.8 DATUM NGVD DRILLED BY Maine Test Boring							B801	
ROUND E	VATE	R EL.	150	DAT	E LOGGED E	3Y Brian F. Jankauskas		TAL DEPTH) _ 60.5	Page 1 of 3
EPTH FT.	TYPE S NO.	SAMPI BLOWS /6 IN.	PEN	REC ft	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
	S1	1-2 2-8	2	0.6	Top 0.2'- TOPSOIL Bottom 0.4'- SAND (SP) Narrowly graded. Mostly fine sand, 5% some roots, brown, FILL	0.2'			
_5	S2	3-2 2-1	2	0.6	SAND (SP) Narrowly graded. Mostly fine to mediumonick/cinders, 5% Non-plastic fines, browners.	m sand, ~20% own, FILL		FILL	
10	\$3	3-2 1-2	2	0.4	CINDERS/SLAG WITH SAND Mostly cinders and slag, ~40% mediu	m sand, black, FILL			
15	S4	1-1 3-4	2	0.4	SAND (SP) Narrowly graded. Mostly fine sand, ~trounded fine gravel, 5% Non-plastic fi				
20	S5	4-3 4-3	2	0.6	SAND (SP) Narrowly graded. Mostly fine sand, < brown	5% Non-plastic fines,		SAND AND SILTY	
25 	S6	4-5 6-5	2	0.5	SAND (SP) Narrowly graded. Mostly fine to medi Non-plastic fines, brown	um sand, <5%		SAND	
2.0 IN. OI WOR-WEI WOH-WEI	D SPL IGHT (IGHT (ETRA	IT SPO OF ROI OF ROI TION LE	ON S OS OS AN ENGT	AMPL ID HA IH OF	MMER SAMPLER OR CORE BARREL	Notes: Case (drive) wa	ash boring		
	GTH (OF SOU N SAMP	IND C	ORE S	SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway	,	Φ GEI Consultants, Inc Project 98217

BORING I				+96, L		RT - FINISH 10/22/98 Y <u>Maine Test Boring</u>	- 10/26/98		B801
GROUND						Y Brian F. Jankauskas		TAL DEPTH	Page 2 of 3
							(Ft.	60.5	
DEPTH		SAMP			SOIL AND ROCK DESCRI	PTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
FT.	TYPE & NO.	BLOWS /8 IN	PEN	REC ft			IESIS	DESCRIP.	Remarks
30	S7	9-13 11-11	2		SAND (SP) Narrowly graded. Mostly fine to medium non-plastic, brown	m sand, <5%			
35	S8	10-10 10-12			SILTY SAND (SM) Narrowly graded. Mostly fine sand, 15 brown	% non-plastic fines,		SAND AND SILTY SAND	
40	\$9	14-13 14-17		0.6	SAND (SW) Widely graded. Mostly fine to coarse s sub-rounded fine gravel, <5% non-plas				
45	S10	6-4 5-7	2	0.3	SAND (SP) Narrowly graded. Mostly fine to mediu	ım sand, <5% 47'			
50 50 	S11	33-26 20-24	2	0.6	SAND WITH GRAVEL (SP) Narrowly graded. Mostly fine to mediu 35% angular fine gravel, 5% non-plast top 0.2' rusty brown, bottom 0.4' gray/l	tic fines,		SAND WITH GRAVEL	
55 55 	S12	2 23-19 18-11		0.9	SILTY SAND (SM) Narrowly graded. Mostly fine sand, ~2 5% rounded gravel, brown	55 non-plastic fines,	7	SILTY SAND	
						00	,		Casing refusal at 60'
60			1	<u> </u>	Laurence de la companya de la compan	Notes:	<u>' </u>	<u> </u>	at ou
2.0 IN. WOR-W WOH-W PEN-PE	OD SP EIGHT EIGHT NETRA	LIT SPO OF ROI OF ROI ATION L	ON S DS DS AN ENGT	AMPL ND HA 'H OF	MMER SAMPLER OR CORE BARREL	Notes:			
REC-LE RQD-LE S-SPLIT U-UNDIS	NGTH SPOO	OF SOU	JND C	ORE S	SAMPLE SECTIONS > 4 IN./LENGTH CORED, % IV-TORVANE Qp-PENETROMETER Z GROUND WATER	Broad Stree	et Parkway	,	Φ GEI Consultants, Inc. Project 98217

BORING I	LOCATION	560+9	DATUM NGVD DRILLED	ART - FINISH 10/22/98 - BY Maine Test Boring			B801
GROUND	WATER EL.	DA	LOGGED LOGGED	BY Brian F. Jankauskas	TO (Ft	TAL DEPTH .) 60.5	Page 3 of 3
DEPTH	SAM TYPE BLOWS	PEN REC	SOIL AND ROCK DESCR	RIPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
FT. 60	8 NO 6 IN	ft ft.	Roller bit from 60' to 60.5' Cobble or F	Possible Bedrock 60.5	5'	P-BEDROCK	
_			Bottom of Boring	30.5'			
_						-	U =1
-							
_							
65							8
_					3		1
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70							
			2 2 2				
E						P	
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-							
75							-11
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-						1	
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-							
80		1 1					
F					- "		-
F							
F							
E							
85							
F							
H							
90				Notes:			
2.0 IN.	OD SPLIT SF	OON SAMI	MMER FALLING 30 IN. TO DRIVE A PLER	140.65.			
WOR-W	EIGHT OF RE	ODS ODS AND H	HAMMER				
PEN-PE	NETRATION NGTH OF RE	LENGTH O	F SAMPLER OR CORE BARREL				
RQD-LE	NGTH OF SC	OUND COR	E SECTIONS > 4 IN./LENGTH CORED. %	Broad Str	eet Parkwa	,	Φ GEI Consultan Project 982
S-SPLIT	SPOON SAN	/ITLE	Sv-TORVANE Qp-PENETROMETER V GROUND WATER	Diodd Oliv		· = = =	

BORING I	OCAT	ION _			Rt 33' DATE START - FINISH_ DATUM_NGVD DRILLED BY Maine Test	10/21/98-	10/22/98			B802
GROUND	WATE	ER EL.	151	DAT		nkauskas		TAL DEPTH		Descript 2
							(Ft.) 73.0		Page 1 of 3
DEPTH		SAMP	LE				FIELD	STRATUM		
FT.	TYPE	BLOWS /6IN.	PEN	REC	SOIL AND ROCK DESCRIPTIONS		TESTS	DESCRIP.		Remarks
0	& NO.			1.2	UPPER 0.7'-TOPSOIL	1.0		TOPSOIL		
 - '	S1	1-2 3-10	2	1.2	MIDDLE 0.3'- SAND (SP) Narrowly graded. Mostly			FILL	1 1	İ
⊩	7	3-10			5% Non-plastic fines, ~10% ash, FILL.	1.5		''	1 1	
-					BOTTOM 0.2'- SAND (SP)				1 1	
⊩					Narrowly graded. mostly fine sand, 5% non-plastic	fines.			1 1	
					brown.	·			1 1	
							1		1 1	
									1 1	
								!	1 1	
5					011 TV 0 4 N D (0 4 N				1 1	
 -	S2	5-3	2		SILTY SAND (SM)	tio finos			1 1	
 -		3-2			Narrowly graded. Mostly fine sand, ~40% non-plas brown with dark brown stratification.	ac illes,			1 1	
-				1	brown with dark brown straulication.				1 1	
 -							1		1 1	
	П						1		1 1	
									1 1	
	Ш								1 1	
								1		
10					2412 (02)					
 	S3	3-2	2		SAND (SP)					
_		3-3			Narrowly graded. Mostly fine to medium sand, <5% non-plastic fines, brown.		1		1 1	_
⊩	И	ļ			1376 Horr-plastic filles, brown.		1		1 1	
 								SAND	1 1	
								AND	1 1	
		1			'			SILTY	1 1	
				1				SAND	ıl şi	
⊩				1				1		0
15	S4	6-8	2	ا م	SAND (SP)					
-	34	8-7	^	0.5	Narrowly graded. Mostly fine sand, 5% non-plastic	fines		- 11		II.
 		•			brown.	, ,,,,				
 										
		i							ш	
 	Н			l						15
-	ш		Ç.							
⊩ ₂₀	H							51		93
├ ─- ²	S5	15-10	2	0.4	SIMILAR TO S4, 10% fine gravel.					
⊩		9-11	_		3				1 1	
	Ш							1	1 1	
1	П			[
⊩										
⊩				[1			
I	Н									,
25	П		1							
	S6	11-14		0.6	SIMILAR TO S4.					
		19-18		1						
 				1						-
\Vdash	[]									
⊩	Ш			1						
\vdash	П									
	Ш									_
				1						
30	Ш	12		<u> </u>				<u></u>		
BLOWS	PER 6	IN 140	LB. F	IAMM	ER FALLING 30 IN. TO DRIVE A Notes: Cas	ed (driven)	wash borii	ng		
2.0 IN. C				AMPL	ER					
WOR-WE				יט היי	MAFR					2
WOH-WE					SAMPLER OR CORE BARREL					
REC-LEN	IGTH (OF RECO	OVER	ED S	AMPLE			1		
					SECTIONS > 4 IN./LENGTH CORED, %	Broad Stree	t Darkumu			I Consultants, Inc. Project 98217
S-SPLIT					/-TORVANE Qp-PENETROMETER E GROUND WATER	nuau Sliee	rrainway			TOJECT 302 II
1100010					with the second					

SORING L SROUND					Rt 33' DATE STAF DATUM NGVD DRILLED B	RT - FINISH 10/21/98-1 Y Maine Test Boring	10/22/98		B802
ROUND						Y Brian F. Jankauskas		TAL DEPTH) 73.0_	Page 2 of 3
EPTH FT.	TYPE & NO.	SAMP	PEN	REC ft.	SOIL AND ROCK DESCRI	PTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
30	S7	8-12 13-14	2	0.7	SAND (SP) Narrowly graded. Mostly fine to mediu 5% non-plastic fines, brown.	m sand,			
35	S8	11-12 20-21	2	0.8	Similar to S7.			SAND	
40	S 9	10-20 19-19	2	0.7	SAND (SP) Narrowly graded. Mostly fine sand, <5 fines, brown.	% non-plastic	5	- 1	
45	S10	21-24 22-21		0.8	SAND (SW) Widely graded sand. Mostly fine to co 5% non-plastic fines, 5% fine gravel, b		-1		
50	S11 R1	60 2 min 3 min 4 min	5.1	1	GRAVEL WITH SAND (GP) Narrowly Mostly fine angular gravel, ~40% med <5% non-plastic fines, brown. Boulders and Cobbles.	graded. ium to coarse sand,		GRAVEL WITH SAND AND BOULDERS /COBBLES	
55 - 56.6	S12	4 min 4 min 90 16/0.1	0.6	0.4	GRAVEL WITH SAND (SP) Narrowly rounded to angular fine gravel, ~20%	graded. Mostly sub- fine to coarse sand,			
- - - - - - 60					5% non-plastic fines, gray.	58		GLACIAL TILL	
2.0 IN. C WOR-WE WOH-WE PEN-PEN REC-LEN	D SPI IGHT IGHT IETRA IGTH (LIT SPO OF ROD OF ROD TION LE OF REC	ON SA DS AN ENGT OVER	AMPL ID HA H OF RED S	MMER SAMPLER OR CORE BARREL AMPLE	Notes:			Φ GEI Consultants, Inc
RQD-LEN S-SPLIT S U-UNDIS	SPOO	N SAMP	LE	S	SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway		Project 98217

BORING	LOCA	TION _	56	0+94;	14.00		10/22/98			B802
GROUN	D ELE\	ER EL.	15	1.2 DAT		skas	TO	TAL DEPTH		Page 3 of 3
DEPTH	T	SAMF	01 =					73.0	<u> </u>	
	TYPE		PEN	REC	SOIL AND ROCK DESCRIPTIONS		FIELD TESTS	STRATUM DESCRIP.		Remarks
FT.	TYPE & NO.	BLOWS /6 IN.	ft.	R.	SILTY SAND WITH GRAVEL (SP)			GLACIAL		
- 60	1913	100-	1.0		Mostly fine sand, 15% non-plastic fines,			TILL		
E		111/			15% fine angular gravel, brown.	61.8'				
 -	Ш	0.3								
63.0							'			
F	IIR2	3 min 3 min		3.4	GRANITE Fractures spaced from 1" to 3" apart, dipping at 40, 50, 70, and 80 degrees from the horizon	tal				
H		2 min			Upper 1.5' is slightly weathered with discoloration and					
65		4 min			multiple fractures. Lower 1.9' is unweathered. RQD =	8%.				- 1
 -										
L			1							=
 	Hes	4 min	42	4 1	GRANITE Fractures spaced from about 1" to 7" apart,					2
 -	11,73	3 min			dipping at 20, 30, 40, 50, 60 and 70 degrees from the	'				
		3 min			horizontal. Slightly weathered. RQD = 42%.			BEDROCK		
⊩		4 min 2 min/0.2				:		DEDITOOR		
70				ĺ						
 										
	R4			1.7	GRANITE Fractures spaced from 1" to 7" apart,					7.
F		2 min/0.8	3		dipping at 0, 40, 60, 70 and 90 degrees from the horiz Near vertical 15" long fracture. Slightly weathered.	ontal.				
 	0				RQD=64%.	73.0'			\sqcup	
F	Ш				Bottom of Boring 73.0'				1 1	
 -										
75					_ = =					
 -	Ш									
L										
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E									1	
E	Ш									
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90	Ш	<u> </u>	<u></u>		Notes	*	<u>L</u>	<u> </u>		
		IN 14			IER FALLING 30 IN. TO DRIVE A Notes:					
WOR-V	VEIGHT	OF RO	DS							
		OF RO			MMER SAMPLER OR CORE BARREL					
REC-LE	NGTH	OF REC	OVER	RED S	AMPLE			<u>-</u>	ው ርር	I Consultanta Inc
		OF SOU N SAMF			SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER Broa	d Stree	t Parkway		Ψ GE	I Consultants, Inc. Project 98217
		BED SAN			GROUND WATER					

ORING LOC ROUND ELI	CATION				t. 16' DATE START - FINISH 10/14/98 DATUM NGVD DRILLED BY Maine Test Boring	-10/14/98		B803
ROUND WA	ATER E	Ľ. <u> </u>		DAT			TAL DEPTH .) <u>18.8</u>	Page 1 of 1
EPTH TYP		MPLE		REC	SOIL AND ROCK DESCRIPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
FT. TYF	S1 WC WC WC	OR :	t	0.1	SAND (SP) Narrowly graded. Mostly fine sand. 5% non-plastic fines, metal, dark brown. fill 4.0'	10.00	FILL	
5	S2 35- 25-		2 (SILTY SAND WITH GRAVEL (SM) Narrowly graded. Mostly fine sand. 25% fine gravel, angular to round. 15% non-plastic fines, brown. Glacial till. 9.1'		GLACIAL TILL	
	R1 3 m R2 7 m 3 m 3 m 2 m 2 m	nin 4 nin nin nin		4.0	GRANITE No fractures, unweathered. GRANITE Fractures spaced from 1" to 12" apart, dipping at 20,30,40, and 80 degrees from the horizontal, Upper 1.8' and Lower 0.8' unweathered. Middle 1.4' slightly weathered. RQD=42%.		BEDROCK	
14.3 _15 F	R2 4 m 2 m 3 m 2 m 2 n 0.	nin nin nin nin	6		GRANITE Fractures spaced from 2" to 31" apart, dipping at 0 and 50 degrees from the horizontal. Upper 2.5' and Lower 1.3' unweathered. Middle 0.3' slightly weathered. RQD=74%.			
18.9					Bottom of Boring 18.9'			
_25		-						
30								
.0 IN. OD S DR-WEIGI DH-WEIGI	SPLIT S HT OF F HT OF F TRATION	POON RODS RODS N LEN	N SAI AND GTH	HAI OF S	MMER SAMPLER OR CORE BARREL) wash bor ep.	ing.	
	TH OF S	MPLE	co E	RE S	SECTIONS > 4 IN./LENGTH CORED, % /-TORVANE	et Parkway	,	Φ GEI Consultants, Inc Project 98217

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BORING LOCATI		9+54; Rt	31' DATE STA DATUM NGVD DRILLED B	RT - FINISH 10/14/98 Y Maine Test Boring	_		B804
GROUND ELEVA GROUND WATE	R EL.	DAT		Y Brian F. Jankauskas		TAL DEPTH)12.1	Page 1 of 1
DEPTH	SAMPLE	EN REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
F1. & NO.	/8 INf	2 0.8	SILTY SAND WITH GRAVEL (SM) Narrowly graded. Mostly fine sand, 30 20% fine angular gravel, some organic	% non-plastic fines. s, brown and black.		SILTY SAND WITH GRAVEL	
	58-14 20-17	2 0.8	SAND WITH SILT AND GRAVEL (SP. Narrowly graded. Mostly fine to mediu plastic fines, 25% angular gravel, brow	ım sand, 10% non-		GLACIAL TILL	
10 			Roller bit from 10.3' to 12.1', boulder o	12.1'		POSSIBLE BEDROCK	
			Bottom of Boring	12.1			
2.0 IN. OD SPL WOR-WEIGHT (WOH-WEIGHT (IT SPOOF OF RODS OF RODS	N SAMPL S S AND HA	MMER	Notes: Cased (driven) Water 10.1' de	wash bori eep.	ng.	
REC-LENGTH C	OF RECOV OF SOUNI N SAMPLE	VERED S D CORE E S	SAMPLER OR CORE BARREL AMPLE SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	et Parkway	,	Φ GEI Consultants, Inc Project 98217

DRING L				+84: L	t 19' DATE START - FINISH 10/14 DATUM NGVD DRILLED BY Maine Test Boring	1/98 -10/14/98		B805
ROUND ROUND	WATE	ER EL.	103	DAT	E LOGGED BY Brian F. Jankauska		OTAL DEPTH ft.) 5.1	Page 1 of 1
PTH FT.	TYPE & NO.	SAMP BLOWS /6 IN.	PEN ft.	REC ft.	SOIL AND ROCK DESCRIPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
0	S1	19-9 5-7	2	0.6	Lower 0.4' - SILTY SAND WITH GRAVEL (SM) Narrowly graded, mostly fine sand, 15% non-plastic fines, light brown. Fractured.	0.5'	SAND SILTY SAND WITH GRAVEL	Gravel lodged in tip of spoon
		1				1.8'	- DOCCUPI F	
_5						5.1'	POSSIBLE BEDROCK	
					Bottom of Boring 5.1'			
								65
10	l	:						-
15								
, 5					·			
20				ļ	1 9			
	_							
_25								
30								
0 IN. C DR-WE DH-WE N-PEN	DD SP EIGHT EIGHT NETRA	LIT SPO OF ROI OF ROI TION LI	ON S OS OS AN ENGT	AMPL ND HA 'H OF	MMER SAMPLER OR CORE BARREL	sh boring.		-
OD-LEN	NGTH SPOO	OF REC OF SOL N SAMF ED SAM	IND C	ORE S	AMPLE SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER Broad S GROUND WATER	Street Parkw	ay	Φ GEI Consultants, In Project 98217

YBORING GROUNI	G LOCA	ATION	103	9 -	558+14; Rt 29' DATUM NGVD DRILLED B	DATE START - FINISH 1 BY Maine Test Boring	0/15/98-10	/15/98	B806
GROUNI	D WATE	ER EL.	100	DAT		Brian F. Jankauskas		TAL DEPTH)27.6	Page 1 of 1
DEPTH	TYPE	SAMP	LE PEN	REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
FT.	& NO.	76 IN. 18-58	2	ft.	SILTY SAND WITH GRAVEL (SM)				-
		19-16 13-14		0.9	Narrowly graded. Mostly fine sand, ~3 fines, 20% fine subrounded gravel, da some organics. SILTY SAND (SM) Narrowly graded. Mostly fine sand, ~3	rk brown, 30% non-plastic		SILTY SAND AND SILTY SAND WITH GRAVEL	
					fines, 10% fine angular gravel, grayish	i brown.			
	S3	8-13 11-21	2		SILTY SAND (SM) Narrowly graded. Mostly fine sand, ~2 fines, 10% subrounded gravel, grayish Tougher drilling - Possible glacial till la	n brown.		GLACIAL TILL	
15 	R1	5 min 3 min 2 min	2.5	1.1	Boulders/Cobbles and Gravel.				
17.5		3 min 3 min 3 min 5 min		2.6	GRANITE Fractures dipping at 0, 30, 40, 60, an horizontal, spaced from 1" to 12" apar Multiple fractures in the middle 9". R0	t. Slightly weathered.			
21.6	R3	4 min 2 min /0.5	1.5	2.7	GRANITE Fractures dipping at 40 and 50 degree spaced from 4" to 12" apart. Slightly v			BEDROCK	
25 25		2 min 2 min 2 min 1 min /0.5		3.9	GRANITE Fractures dipping at 10, 20 50, and 60 degrees from the horizonta apart. Slightly weathered. RQD=50%	al, spaced up to 18"			
27.6	5 L					27.6'			
E					Bottom of Boring	21.0			
30					23,				
BLOWS 2.0 IN. WOR-W WOH-W	OD SPI EIGHT EIGHT NETRA	OF ROD OF ROD OF ROD TION LE	ON SA S AN NGTI	D HAI	MMER SAMPLER OR CORE BARREL	Notes: Cased (driven) Water 12.5' dee	wash borii	ng.	
	NGTH SPOO	OF SOU N SAMP	ND C LE	ORE S	SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway		El Consultants, Inc. Project 98217

RING LO				+46; l		T - FINISH <u>11/9/98 - 11</u> Maine Test Boring	/10/98		B807
ROUND EL ROUND W					DATUM NGVD DRILLED BY		TAL DEPTH 37.9	Page 1 of 2	
PTH TY	PE NO.	SAMPI BLOWS / 6 IN.	PEN It.	REC ft.	SOIL AND ROCK DESCRIP	TIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
	S1	1-7 23-53	2		Upper 0.6' - TOPSOIL Middle 0.4' - SILTY SAND (SM) Narrowly graded. Mostly fine sand, 20% orange brown, FILL. Lower 0.7' - SAND (SP) Narrowly graded. Mostly fine sand, 5% non-plastic fines, brown, FILL.			TOPSOIL	
5	S2	7-7 5-4	2	1.9	SAND WITH SILT (SP-SM) Narrowly graded. Mostly fine sand, 10% coal, brown to grey, FILL.	6 non-plastic fines,		FILL	
10	S3	3-1 2-2	2	0	No sample, No recovery.		7717		
	S4 R1	118 5 min 4 min	0.5	0.4	SAND (SP) Narrowly graded. Mostly fir sand, 5% sub-angular gravel, <5% non-Cobbles and gravel ranging from 3" to 1	-plastic fines, brown	1		
19.4 20 21.4	S 5	1 min 6-8 14-10	2		SAND WITH SILT (SP-SM) Narrowly graded. Mostly fine to mediur plastic fines, 5% angular fine gravel, bro			SAND AND SAND WITH SILT	
	S6	9-22 83-43	2	1.0	Upper 0.3' - SILTY SAND WITH GRAV Narrowly graded, Mostly fine sand, ~30 fines, 15% rounded fine gravel, brown.	-35% non-plastic GLACIAL TILL 26.5		GLACIAL TILL	
27.3	R2	5 min 3 min 2 min 3 min	1	4.5	Lower 0.7' - GRAVEL (GP) Fractured rd ~10% fine sand, <5% non-plastic fines GRANITE Upper 2.2' - Unweathered, Lower 2.3' - Fractures dipping at 20, 30, 40, 50, and from the horizontal, spaced from 1" to 2"	ock by brown Slightly weathered d 60 degrees 11" apart, RQD=65%.		BEDROCK	(
IN. OD R-WEIG H-WEIG N-PENET	SPL HT (HT (IT SPOO DF ROD DF ROD TION LE	ON SA S S AN NGTI	AMPL D HA H OF	ER MMER SAMPLER OR CORE BARREL	Notes: Auger boring 0- Cased (driven) o Cased (spun) bo	wash borir	ng from 5-16 16.2 to 27.8	.2'
C-LENGT D-LENG SPLIT SP JNDISTU	0 HT	F SOU	ND C	ORE S	AMPLE SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Street	t Parkway		Φ GEI Consultants, Inc Project 98217

BORING L GROUND	ELEV	ATION	12	+14; L 4.1	DATUM NGVD DRILLED E	RT - FINISH 11/9/98 BY Maine Test Boring BY Brian F. Jankauskas	- 11/10/98	TAL DEPTH	-	B807
GROUND	WAIL	-		DAI	LOGGED E	Brian F. Jankauskas) 37.9		Page 2 of
DEPTH FT.	TYPE & NO.	SAMP BLOWS / 6 IN.		REC ft.	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.		Remarks
30	I I	2 min								
-		/0.9'					- 1			
_									1 1	
_									1 1	
_	R3	2 min	5	5	GRAY TWO-MICA GRANITE Slighty	veathered. Fractures		BEDROCK		
_	8	2 min 2 min			dipping at 10, 30, 50, and 70 degrees spaced from 1" to 21" apart, RQD= 77	from the nonzontal, %.				
35		2 min								
_		2 min			11					
_										
_					~					
_				_	Bottom of Boring 3	37.9			-	
_					Bottom or Borning S					
_										
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F										
L	Ш									
-										
F 60	Ш									
	PER 6	IN 140	LB.	HAMN	MER FALLING 30 IN. TO DRIVE A	Notes:				
2.0 IN. 0 WOR-W	DD SP	LIT SPO	ON S							
WOH-WE	EIGHT	OF ROI	OS AN							
REC-LEN	IGTH	OF REC	OVE	RED S						
	NGTH	OF SOL		ORE	SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER	Broad Stree	4 Dawler		ΦGE	I Consultan Project 982

D ELEVA D WATE	R EL.		DAT	DATUM <u>NGVD</u> DRILLED B	3Y <u>Maine Test Boring</u> 3Y <u>Brian F. Jankauskas</u>		TAL DEPTH	Page 1 of 1
						(Ft.) 18.9	raye 1011
TYPE & NO.	SAMP BLOWS /6 IN.	PEN ft.	REC ft.	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
S1	1-4 2-17	2		SILTY GRAVEL (GM) Mostly fine angular gravel, 15% non-pl 10% fine sand, organics (leaves), odor				Gravel lodged spoon
	14-26 16-11	2	1	SAND WITH GRAVEL (SP) Narrowly graded. Mostly fine to mediu 20% fine fractured gravel, 5% non-plated ark brown.	ım sand, stic fines,		SILTY SAND/ GRAVEL AND SAND WITH GRAVEL	
S3	6-4 6-5	2		SILTY SAND (SM) Mostly fine sand, ~20% non-plastic fin	es, light brown.			
S4	9-10 12-17	2	0.5	SILTY SAND WITH GRAVEL (SM) Mostly fine sand, ~25% non-plastic fin coarse gravel (one stone, coarse grave	es,15% fine to el), light brown. 17.0			
				Silty sand in cuttings	18.6		GLACIAL TILL	Casing Refusa
H		-	-	Roller bit from 18.6' to 18.9', Boulder of Boring	or Possible Bedrock18.9		P-BEDROCK	at 18.6'
D SPL EIGHT (EIGHT (IT SPO OF ROI OF ROI	ON S SS OS AN	AMPL	MMER	Notes: Cased (driven) Water 3.8' dee	wash bori p.	ing.	
NGTH (F REC	OVEF IND C	RED S ORE S	SAMPLER OR CORE BARREL AMPLE SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	et Parkway	,	Φ GEI Consultants, Project 98217

OCAT ELEV WATE	NOITA	141 116.	.5	14; Lt 31' DATE START - FINISH 10/27/98-11 DATUM NGVD DRILLED BY Maine Test Boring TE 11/30/98 LOGGED BY Brian F. Jankauskas	то	TAL DEPTH	B809
YPE NO.	SAMF	LE	REC	SOIL AND ROCK DESCRIPTIONS	FIELD TESTS	STRATUM DESCRIP.	Equipmen Installation
S1	7-7 5-4	2	1.1	Upper 0.3' - ASPHALT 0.3 Lower 0.8' - SAND (SP) Narrowly graded. Mostly fine sand, 10% sub-angular fine gravel, 5% non-plastic fines, yellow brown, brick, FILL.		ASPHALT	Stand Pipe Stick-up) in in 1' of con- surface sea PVC 0.2' be top of steel
S2	3-5 6-7	2	1.1	SILTY SAND (SM) Narrowly graded. Mostly fine sand, 20% non-plastic fines, dark brown to yellow brown, brick, FILL.		FILL	1.5" ID PV from 0' to 2
S3	10-10 12-13		0.8	Upper 0.2' - SAND (SW) Widely graded. Mostly fine to coarse sand, 10% rounded fine gravel, <5% non-plastic fines, orange brown Lower 0.6' - SAND (SP) Narrowly graded. Mostly fine sand, <5% non-plastic fines, brown.			- Cuttings fr
S4	9-11 11-13		0.5	SAND (SP) Narrowly graded. Mostly fine sand, 5% non-plastic fines, brown		SAND	1' to 19'
	10-9 11-18		1.0	Similar to S4 Gravel lodged in tip of spoon			Filter sand 19'-21.6' Bentonite From 21.6
S6	13-11 11-11		1.2	SILTY SAND (SM) Narrowly graded. Mostly fine sand, ~20% non-plastic fines, 5% rounded gravel, gray.	5'	SILTY	1.5" ID P\ screen fro 25.5' to 38
D SPL	IT SPO OF RO OF RO	ON S DS DS Af	AMPL	MER FALLING 30 IN. TO DRIVE A ER MMER SAMPLER OR CORE BARREL	wash borin	g.	Filter sand from 23.2
GTH (GTH (SPOOM	OF REC	OVE JND (PLE	RED S CORE S	SAMPLE SAMPLE SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER Broad Stre	et Parkway	,	Φ GEI Consulta Project 98

FT. 30		BLOWS	Locu						
			PEN	REC	SOIL AND ROCK DESCRIPTIONS	TESTS	DESCRIP.		
- - - -	S7	12-12	2		Narrowly graded. Mostly fine sand, ~20% non-plastic fines, 10% rounded fine gravel, gray		SILTY SAND		
35 36.9	Section 1 Sectio								
 40 	2.	4 min 3 min			Lower 3.4' - GRANITE Slightly weathered, Fractures dipping at 20 and 40 degrees		BEDROCK	from 36	
FI		/0.8'	-	-		71		THE STATE OF THE S	
45									
55									

BORING				5+34; 2.1		RT - FINISH <u>12/3/98 - 1</u> BY <u>Maine Test Boring</u>	2/3/98		B810
GROUNE				DAT	E LOGGED E	BY Brian F. Jankauskas		TAL DEPTH) 36.5	Page 1 of 2
DEPTH FT.	TYPE	SAMP	LE	REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
F1.	S1	76 IN. 1-15	ñ. 2	1	Upper 0.5' - TOPSOIL	0.5'		TOPSOIL	
- - - - - - -		15-11			Lower 0.5' - SAND WITH GRAVEL (SI Narrowly graded. Mostly fine to mediu rounded and angular gravel, <5% non- roots, FILL	P) m sand, 15%			
5 5 	S2	7-6 5-7	2	0.4	SAND WITH GRAVEL (SP) Narrowly graded. Mostly fine to mediu fine gravel, 5% non-plastic fines, brow	ım sand, 15% rounded n, brick, FILL		FILL	
10	S3	7-11 15-12	2	0.8	SAND WITH GRAVEL (SP) Narrowly graded. Mostly fine to medit to sub-angular gravel, <5% non-plastic	ım sand, 25% rounded c fines, brown, FILL	1		Cuttings From
15 15	S4	61-48 56-49		1.1	SAND WITH GRAVEL (SP) Narrowly graded. Mostly fine to medit to angular fine gravel, 5% non-plastic				- 0 10 20
20	S5	21-17 15-14		0.3	SAND WITH GRAVEL (SP) Narrowly graded. Mostly fine to medit fine gravel, 5% non-plastic fines, brow			SAND, SAND WITH GRAVEL, AND SILTY SAND	
25 25 26.5 26.5	S6 R1		5		Boulder from 24.2' to 25.4' Upper 0.4' - SAND (SW) Widely grade coarse sand, 5% fine gravel, <5% nor Lower 0.1' - SILTY SAND (SM) Narrowfine, ~20% non-plastic fines, gray GRANITE Slightly weathered. Fractures dipping from the horizontal, spaced from 4" up RQD= 80%	n-plastic fines, gray wly graded. Mostly 26.5 at 10 and 40 degrees			Bentonite chips From 26' to 36.5'
BLOWS 2.0 IN. (WOR-WI WOH-WI PEN-PEI	OD SPI EIGHT EIGHT NETRA	LIT SPO OF ROI OF ROI TION LE	ON SA OS AN ENGT	AMPL ID HA H OF	MMER SAMPLER OR CORE BARREL	Notes: Auger 0 to 5' Cased (driven) wash 5' to 26.5'			
REC-LEN RQD-LEI S-SPLIT U-UNDIS	NGTH SPOO	OF SOU N SAMP	IND C	ORE S	AMPLE SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway		Φ GEI Consultants, Inc. Project 98217

RING L	OCATION 555+34;				Rt 21' DATE START - FINISH_	RT - FINISH <u>12/3/98 - 1</u> BY <u>Maine Test Boring</u>	12/3/98 - 12/3/98		B810
OUND	WAT	ELEVATION 122.1 WATER EL. D			DATUM_NGVD DRILLED TE LOGGED	BY Brian F. Jankauskas	TOTAL DEPTH (Ft.) <u>36.5</u>		Page 2 of 2
РТН		SAMPLE			SOIL AND ROCK DESCRIPTIONS		FIELD TESTS	STRATUM DESCRIP.	Remarks
r	TYPE & NO.	BLOWS /6 IN.	PEN ft.	REC ft.			15212	DESCRIP.	Nemarks
30	R2	1 min 1 min 1 min 1 min 1 min		5.1	GRANITE Slightly weathered. Fractures dipping from the horizontal, spaced from 5" up RQD=100%	at 20 and 40 degrees to 14" apart,		BEDROCK	
35						36.5'			
					Bottom of Boring	36.5'			
10									
15									
					4				
50									
55									
					*				
60									
WS F IN. C R-WE H-WE	D SPI IGHT IGHT IETRA	LIT SPO OF ROI OF ROI TION LI	ON S DS DS AN ENGT	AMPL ID HA IH OF	MMER SAMPLER OR CORE BARREL	Notes:			
D-LEN	NGTH SPOO		IND C	ORE	SAMPLE SECTIONS > 4 IN:/LENGTH CORED, % SV-TORVANE QP-PENETROMETER // GROUND WATER	Broad Stree	t Parkway		Φ GEI Consultants, In Project 98217

	NG LOCATION554+64; Lt 29' DATE START - FINISH11/10/98 - 11/10/98 UND ELEVATION144.5 DATUM NGVD_ DRILLED BY Maine Test Boring					B811			
GROUND	WATE	R EL.		DAT	E LOGGED E	Brian F. Jankauskas		TAL DEPTH	Page 1 of 2
DEPTH		SAMP			SOIL AND ROCK DESCR	UPTIONS	FIELD	STRATUM	
FT.	TYPE & NO.	BLOWS /6 IN.	PEN ft	REC ft			TESTS	DESCRIP.	Remarks
-	S1	5-6 5-4	2	1.1	ASPHALT Upper 0.4'- SAND (SP) Narrowly grades and, <5% non-plastic fines, brown/black Lower 0.7' -Similar to above but brown	ack, FILL. 1.3"		FILL FILL	
5 5	S2	4-5 7-7	2	1.3	SILTY SAND (SM) Narrowly graded. Mostly fine sand, ~2 brown	5% non-plastic fines,		0	
	S3	8-12 12-15	2	0.8	Similar to S2				
								SILTY SAND AND SAND	
15 	S4	10-13 14-15	2	0.9	Similar to S2				
20 	S 5	13-17 19-22	2	0.6	Similar to S2				
25 25 	\$6	18-13 14-13		0.8	Upper 0.5' - Similar to S2 Lower 0.3' - SAND (SP) Narrowly graded. Mostly fine to mediu non-plastic fines, brown	ım sand, 5%			
2.0 IN. C WOR-WE WOH-WE PEN-PEN REC-LEN	DD SPL EIGHT F EIGHT F NETRA NGTH (IT SPOO OF ROD OF ROD TION LE OF RECO	ON SA S AN NGTI OVER	AMPL D HA H OF RED S	MMER SAMPLER OR CORE BARREL AMPLE	Notes: Auger 0 to 5' Cased (driven) wash 5'	' to 54.2'		Φ GEI Consultants, Inc.
RQD-LENGTH OF SOUND CORE SECTIONS > 4 IN./LENGTH CORED, % S-SPLIT SPOON SAMPLE Sv-TORVANE Qp-PENETROMETER Broad Street Parkway U-UNDISTURBED SAMPLE V GROUND WATER							Project 98217		

	RING LOCATION 554+64; Lt 29' DATE START - FINISH 11/10/98 - 11/10/98 - 11/10/98 ROUND ELEVATION 144.5 DATUM NGVD DRILLED BY Maine Test Boring						B811		
ROUND	WATE	ER EL.	144	DAT	E LOGGED E	BY Brian F. Jankauskas		TAL DEPTH) _54.2	Page 2 of 2
EPTH	TYPE & NO.	SAMP BLOWS /6 IN.		REC	SOIL AND ROCK DESCR	UPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
30	S7	9-11 12-14	2	0.5	SAND (SP) Narrowly graded. Mostly fine to medit non-plastic fines, brown	um sand, <5%		SILTY SAND AND SAND	
_35	S8	25-44 20-20	2	0.5	SAND WITH GRAVEL (SW) Widely graded. Mostly fine to coarse and rounded gravel, <5% non-plastic	34.4' sand, 15% sub-angular fines, brown		SAND WITH GRAVEL	Gravel lodged in tip of spoon
_40	S9	25-22 32-40	2	1.1	SILTY SAND WITH GRAVEL (SM) Narrowly graded. Mostly fine sand, 19 15% rounded gravel, brown. Glacial ti	5% non-plastic fines, II.			Gravel lodged in tip of spoon
_45 45.4 47.4	S10	14-30 57-49	2	1.1	Cobble 44.7' to 45.3' SAND WITH SILT AND GRAVEL (SF Narrowly graded. Mostly fine sand, 1 fractured gravel, 10% non-plastic fine	5% rounded to s, brown. Glacial till.		GLACIAL TILL	
49.2 _50	R1	3 min 2 min 2 min 2 min 3 min		4.9	GRANITE Slightly weathered. Fractures dipping degrees from the horizontal, spaced f RQD=60%	from 1" to 14" apart,		BEDROCK	
55					Bottom of Boring	54.2'			
2.0 IN. C OR-WE OH-WE EN-PEN	D SPI IGHT IGHT IETRA	LIT SPO OF ROI OF ROI TION LE	ON S DS DS AN ENGT	AMPL ID HA H OF	MMER SAMPLER OR CORE BARREL	Notes:			
REC-LEN RQD-LEN S-SPLIT S J-UNDIS	IGTH SPOO	OF SOL N SAMP	IND C	ORE S	AMPLE SECTIONS > 4 IN./LENGTH CORED, % IV-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway		Φ GEI Consultants, In Project 98217

BORING	LOCAT	ION _		3+99;		RT - FINISH 10/20/98- 3Y Maine Test Boring	10/20/98		B812
GROUNE GROUNE) ELEV	ER EL.	105	DAT	DATUM <u>NGVD</u> DRILLED E E LOGGED E	Brian F. Jankauskas		TAL DEPTH	Page 1 of 1
DEPTH	1	SAMP	LE		SOIL AND ROCK DESCR	IDTIONS	FIELD	STRATUM	
FT.	TYPE & NO.	BLOWS /6IN.	PEN ft,	REC ft.		IFTIONS	TESTS	DESCRIP.	Remarks
0	S1	WOH -2 4-3	2	2.3	SILTY SAND (SM) Narrowly graded. Mostly fine sand, ~4 some organics, dark brown.	0% non-plastic fines,			
5 5 	S 2	8-4 12-11	2		SILTY SAND WITH GRAVEL (SP) Narrowly graded. Mostly fine sand, 20 gravel, 15% non-plastic fines, brown.)% fine angular		SILTY SAND AND SILTY SAND WITH GRAVEL	
10 10 1	S3	13-10 6-9	2	1.0	SILTY SAND (SM) Narrowly graded. Mostly fine to medium sand, 15% non	-plastic fines, brown.			
15					Roller bit from 14.8' to 15.3', Boulder Bottom of Boring	14.8' or possible bedrock15.3' 15.3'		P-BEDROCK	Casing refusal at 14.8'
20 									
_ _ _ _ 25 _ _ _		-			a		1		
_ _ _ _ _ 30						Notes Const (diagram)	wash had		
2.0 IN. WOR-W WOH-W	OD SPI EIGHT EIGHT NETRA	IT SPO OF ROI OF ROI TION LI	ON S DS AN ENGT	AMPL ID HA H OF	MMER SAMPLER OR CORE BARREL	Notes: Cased (driven) Water 7' deep.	wash boff	ıy.	
	NGTH SPOO	OF SOL N SAMF	JND C	ORE S	SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE	Broad Stree	et Parkway		Φ GEI Consultants, Inc. Project 98217

FT.	TYPE						FIELD	STRATUM	1
	TYPE & NO.	BLOWS /6 IN.	PEN ft.	REC	SOIL AND ROCK DESCR	RIPTIONS	TESTS	DESCRIP.	Remar
<u> </u>	S1	1-3	2		TOPSOIL			TOPSOIL	
- I		6-7			2	1.5'			
_					i		II.		1
_									
-									
_									
- 5	1								
ັ	S2	25-17	2	1.7	SAND WITH SILT (SP-SM)	5 - 1			
.	3	13-12		1	Narrowly graded. Mostly fine sand, 5- light brown	-10% non-plastic fines,			1 1
.					Ingit brown				
					4				
10									
-''	S3	3-3	2	1.8	Similar to S2			П	
	ì	1-			= =				
		WOH						ľ	
								ļ	
-	1								
'	ŀ								
. 45								SILTY SAND,	
_15 15.5								SAND	
	S4		2	0.3	SILTY SAND WITH GRAVEL (SM)	EV/ rounded ground		WITH SILT,	
		16-32			Narrowly graded. Mostly fine sand, 2 15% non-plastic fines, brown	5% louilded graver,		AND	
17.5								SILTY	
								SAND WITH	
<u>'</u>					n e			GRAVEL	
- 20		-				:			
20.5									
	S5	53-67 27-27	2	0.9	SAND WITH SILT (SP-SM) Narrowly graded. Mostly fine sand, 1	0% rounded and			1 2
•	ł	21-21		1	angular gravel, 10% non-plastic fines				
22.5									
-				1					
•						~24'			
25					Upper 0.4' - SAND (SP) Narrowly gra	ded. Mostly fine to		SAND	
	S6		2	0.7	medium sand, 10% angular gravel, <	5% non-plastic fines,			
,		14-10			gray brown Lower 0.3' - SILTY SAND (SM) Narro	26.0'		GLACIAL	-
-					fine sand, 15% non-plastic fines, 10%	angular gravel,		TILL	
-					light brown. Glacial till Roller bit from 27.5' to 28.0', cobble of	27.5°		P-BEDROCK	₹
-					Bottom of Boring	28.0'			
_	Ш								
- 30	Ш								
	ER 6	IN 140	LB.	-IAMN	IER FALLING 30 IN. TO DRIVE A	Notes:	-		
2.0 IN. C	D SPL	IT SPO	ON S			Auger 0' to 5'. Cased (driven) wash be	orina 5' - 2	28'.	
WOR-WE WOH-WE				ID HA	MMER	3333 (35.1) 114511 50			
	ETRA	TION LE	NGT	H OF	SAMPLER OR CORE BARREL				
PEN-PEN	CTU	שב מרכי	אירי	SED C	AMDLE	1			
EN-PEN EC-LEN		OF RECO			AMPLE SECTIONS > 4 IN./LENGTH CORED, %	Broad Street			Φ GEI Consul Project 9

		OCAT	ION _ ATION			Rt 46' DATE STA DATUM NGVD DRILLED B	RT - FINISH 10/20/98 BY Maine Test Boring			B814
			ER EL.	100	DAT	TE LOGGED I	BY Brian F. Jankauskas		TAL DEPTH)22.4	Page 1 of 1
DEP FT		TYPE & NO.	SAMP BLOWS /6 IN.	PEN	REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
-			WOH -1 1-3	2	,.	SILTY SAND (SM) Narrowly graded. Mostly fine sand, ~2 dark brown. Some organics.	25% non-plastic fines,			the second of the
	5	S2	7-2 2-19	2	0.5	SILTY SAND (SM) Narrowly graded. Mostly fine sand, ~4 light brown, 10% coarse gravel.	10% non-plastic fines,		SILTY SAND	
	10					ilgitt blown, 10 % coarse graver.	7'		SAND WITH SILT AND GRAVEL	
	12.3	S3	8-8	2		SAND WITH SILT AND GRAVEL (SW Widely graded. Mostly fine to coarse gravel, 10% non-plastic fines, light broader.	sand, 20% angular		OIVAVEL	ŀ
	15	R1	3 min 2 min 2 min 1 min 2 min		4.4	GRANITE Fractures dipping at 0, 20, and 40 deg horizontal, slightly weathered, spaced RQD=75%	grees from the from 1" to 16" apart.			į
	17.4 20	□ R2	2 min 2 min 1 min 2 min 2 min		4.4	GRANITE Fractures dipping at 10, 20, and 80 de horizontal, spaced from 1" to 23" apa bottom 1.9' is unweathered, middle 0. RQD=80%	rt. The upper 2' and		BEDROCK	
F		STANDARD STA					22.4			
	25					Bottom of Boring	22.4'			
L	30							<u>L</u>		
2.0 WO WO PEN	N. C R-WE H-WE N-PEN	D SPL EIGHT EIGHT IETRA	LIT SPO OF ROI OF ROI TION LI	ON S DS DS AN ENGT	AMPL ID HA H OF		Notes: Cased (driven) Water 8.3' deep	wash bori	ng.	
RQI S-SI	D-LEN PLIT :	NGTH (JND C	ORE	AMPLE SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway		El Consultants, Inc. Project 98217

	TION _ 'ATION ER EL.	14	6.3	Lt 18' DATE START - FINISH 10/28/98 - DATUM NGVD DRILLED BY Maine Test Boring DATE 11/11/98 LOGGED BY Brian F. Jani		TOTAL DEPTH	B815
						(Ft.) _ 61.8 _	Page 1 of 3
TYPE	SAMF	PEN		SOIL AND ROCK DESCRIPTIONS	FIELD TESTS	STRATUM DESCRIP.	Equipment Installation
S1	2-3	2	1.2	Upper 0.5' - TOPSOIL 0.8' Lower 0.7' - SAND WITH SILT (SP-SM)		TOPSOIL	Stand pipe (2.3 stickup) installe
	4-5			Narrowly graded. Mostly fine sand, 10% non-plastic fines, yellow brown ~3.5'		SAND WITH SILT	1' thick concret surface seal. PVC is 0.1' belot top of steel.
S2	4-8 12-9	2	0.7	SILT (SM) Rapid dilatency. Thread could not be formed. ~40% fine gray brown			Filter sand from 1' to 4.4'
S3	9-13 12-13	2	0.8	Similar to S2			
						SILT	
S4	10-14 12-12		0.8	Similar to S2			Cuttings from 4.4' to 21.3'
S5	13-20		0.8	Similar to S2			
	21-21						
							Filter sand From 21.3' to 2
S6	8-12	2	0.9	Similar to S2			Bentonite chips from 23' to 25'
	14-14						Filter sand from 25' to 49.
							1.5" ID PVC screen from 27.8' to 37.8'
D SP IGHT IGHT	LIT SPO OF ROI OF ROI	ON S. DS DS AN	AMPL ID HA		wash bori	ng.	,
		IND C	ORE	AMPLE SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER Broad Stree	t Darkway		Del Consultants, Project 98217

BORING I				+78; L		RT - FINISH 10/28/98 - Y Maine Test Boring	10/28/98		B815
GROUND GROUND			110	1.3		Brian F. Jankauskas		TAL DEPTH) 61.8	Page 2 of 3
DEPTH FT.	TYPE 8 NO.	SAMP BLOWS /6 IN.	LE PEN	REC R.	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Equipment Installation
30	S7	8-9 11-17	2		Similar to S2	33.3'		SILT	1.5" ID PVC well screen from 27.8' to 37.8'
35 	S8	9-8 8-19	2		SILTY SAND (SM) Narrowly graded, Mostly fine sand, ~20 5% rounded fine gravel, gray				
40 	S 9	14-18 26-24	2	0.8	SILTY SAND WITH GRAVEL (SM) Narrowly graded. Mostly fine sand, ~20 20% rounded gravel, gray	0% non-plastic fines,		SILTY SAND AND SILTY SAND WITH GRAVEL	
45 45 	S10	16-26 24-23	2	1.1	SILTY SAND (SM) Narrowly graded, Mostly fine sand, ~2 10% rounded fine gravel, gray	0% non-plastic fines,			
50 50		10-11 17- 50/0.3 5 min			SILTY SAND WITH GRAVEL (SM) Narrowly graded. Mostly fine sand, ~2 15% angular gravel, gray GRANITE	0% non-plastic fines,			
55		2 min 2 min 2 min 2 min 2 min		7.0	Slightly weathered. Fractures dipping degrees from the horizontal, spaced fi RQD= 80%			BEDROCK	Bentonite Chips 49.4' to 61.8'
56.8 - 56.8 - 60		3 min 3 min 2 min 2 min 2 min		4.4	GRANITE Upper 3.6' - Unweathered, no fracture Lower 0.8' - Slightly weathered. Fract 60 degrees from the horizontal, space (multiple fractures), RQD=80%	tures dipping at 10 and ed from 1" to 5" apart,			
2.0 IN. (WOR-WI WOH-WI PEN-PEI	OD SPI EIGHT EIGHT NETRA	IT SPO OF ROD OF ROD TION LE	ON SA DS AN ENGT	AMPL D HA H OF	MMER SAMPLER OR CORE BARREL	Notes:			
REC-LEN RQD-LEI S-SPLIT U-UNDIS	NGTH (OF SOU N SAMP	IND C	ORE S	AMPLE SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway	, = = D	Φ GEI Consultants, Inc. Project 98217

SORING	LOCA	TION _	551	+78; L1	18' DATE STA DATUM NGVD DRILLED B	RT - FINISH 10/28/98 -	10/28/98		B815
ROUNE) WAT	ER EL.	11	9.3	DATE 11/11/98 LOGGED E	Brian F. Jankauskas		TAL DEPTH .) <u>61.8</u>	Page 3 of 3
EPTH		SAMF			SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Equipment
FT.	TYPE & NO.	BLOWS /6 IN.	PEN ft.	REC ft.			12010	DEGOTAL :	Installation
	Military								
	4000				Bottom of Boring 6	61.8'			
				-	Bottom of Boning (,1.0			
		_		u =					
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-									+
30 BLOWS	PER 6	IN 14	0 LB.	HAMM	I IER FALLING 30 IN. TO DRIVE A	Notes:		<u> </u>	1
2.0 IN. NOR-W	OD SF EIGHT	LIT SPO	ON S DS	AMPL	ER				
WOH-W PEN-PE	EIGHT NETR/	OF RO	DS AI ENGT	'H OF	SAMPLER OR CORE BARREL				
RQD-LE	NGTH	OF SOL	JND (ORE	AMPLE SECTIONS > 4 IN./LENGTH CORED, %	D1 C/	t Darley	,	D GEI Consultants, In Project 98217
S-SPLIT U-UNDI	SPOC STURE	N SAMI SED SAM	/PLE		v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	ar markwa)	<u>'</u>	FIOJECT 90217

GROUND	ELEVA	NOITA	12	3.3	DATUM_NGVD DRILLED B	Y Maine Test Boring		TAL DEDTU	8816
GROUND	WATE	REL.		DAT	E LOGGED E	3Y <u>Brian F. Jankauskas</u>		TAL DEPTH) 42.2	Page 1 of 2
DEPTH FT.	TYPE & NO.	SAMPI BLOWS /6 IN.	E PEN ft.	REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
	S1	1-2 2-2	2		SAND (SP) Narrowly graded. Mostly fine to mediu non-plastic fines, brown, roots	m sand, <5%			
5 5	S6	3-3 4-5	2	0.6	SAND (SP) Narrowly graded. Mostly fine to mediu fine rounded gravel, <5% non-plastic f	ım sand, 5% ines, brown		SAND	
10 10 	S5	7-4 7-12	2	0.5	SAND (SW) Widely graded. 5% fine gravel, <5% n	on-plastic fines, brown			
15 15 	S4	7-14 14-14	2	1.1	SILT (SM) Rapid dilatency, thread could not be for			SILT	
20 20 	S5	23-25 28-22	2	1.1	SILTY SAND (SM) Narrowly graded. Mostly fine sand, ~5 5% angular gravel, gray	~19' 20% non-plastic fines,			
25 25 	S6	14-18 17-17		1.0	SILTY SAND (SM) Narrowly graded. Mostly fine sand, ~ 5% fine rounded gravel, light brown	20% non-plastic fines,		SILTY SAND AND SAND WITH SILT AND GRAVEL	
2.0 IN. C WOR-WE WOH-WE PEN-PEN	DD SPL EIGHT EIGHT NETRA	.IT SPO OF ROD OF ROD TION LE	ON S. DS DS AN ENGT	AMPL ID HA H OF	MMER SAMPLER OR CORE BARREL	Notes: Removed 3' of soil to s Auger 0' to 5' Cased (driven) wash b			
REC-LEN RQD-LEN S-SPLIT U-UNDIS	NGTH (OF SOU N SAMP	ND C	ORE	AMPLE SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway	, <u> </u>	Φ GEI Consultants, Inc. Project 98217

ORING	LOCAT	TION _	55	1+14;	Rt 36' DATE STA	2/8/98		B816	
ROUNI) WAT	ER EL.		DA	DATUM <u>NGVD</u> DRILLED E TE LOGGED E	BY <u>Maine Test Boring</u> BY <u>Brian F. Jankauskas</u>		TAL DEPTH) 42.2	Page 2 of 2
PTH	TVDE	SAMF		REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
FT. 30	TYPE & NO.	BLOWS /6 IN. 9-14	_		SILTY SAND (SM)				
50		18-21		1.0	Narrowly graded. Mostly fine sand, ~2 5% rounded fine gravel, gray	0% non-plastic fines,			
_35	S8	8-6 6-14	2	0.4	SAND WITH SILT AND GRAVEL (SP- Narrowly graded. Mostly fine sand, 20 gravel, 10% non-plastic fines, gray	-SM) 9% rounded coarse		SILTY SAND AND SAND WITH SILT AND GRAVEL	
_40	S9	150	0.3	0		40.3'			
	139	/0.3'	0.3	ľ	Roller bit from 40.3' to 42.2', Boulder o	or Possible Bedrock 42.2'		POSSIBLE BEDROCK	
					Bottom of Boring 4	12.2'	1		
	Ш								
45									
_43				2					
					i.				
50									
_					-				
55									
								П	
60			<u>L</u>					<u> </u>	
2.0 IN. 'OR-W 'OH-W EN-PE	OD SPI EIGHT EIGHT NETRA	LIT SPO OF ROI OF ROI TION LI	ON S OS OS AN ENGT	AMPL ND HA 'H OF	MMER SAMPLER OR CORE BARREL	Notes:			
QD-LE SPLIT	NGTH SPOO		JND (PLE	CORE	SAMPLE SECTIONS > 4 IN./LENGTH CORED, % EV-TORVANE Qp-PENETROMETER / GROUND WATER	Broad Stree	t Parkway	, ==	Φ GEI Consultants, In- Project 98217

ROUND		ATION	126	5.6	Rt 49' DATE START - FINISH 12/8/98 - 13 DATUM NGVD DRILLED BY Maine Test Boring E LOGGED BY Brian F. Jankauskas		TAL DEPTH	B817
EPTH		SAMP) 59.0	Page 1 of 2
FT.	TYPE & NO.	BLOWS /6 IN.	PEN	REC ft.	SOIL AND ROCK DESCRIPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
	S1	2-4 6-4	2	0.5	Upper 0.4' - TOPSOIL 1.0' Lower 0.1' - SAND WITH GRAVEL (SP) Narrowly graded. Mostly fine to medium sand, 25% rounded coarse gravel, 5% non-plastic fines, brown, FILL		TOPSOIL	
_5	S 2	4-4 4-5	2	0.2	SAND (SP) Narrowly graded. Mostly fine to medium sand, <5% non-plastic fines, brown, glass, FILL		FILL	
_10	S3	2-4 6-8	2	1.1	-8.5' SILT (ML) rapid dilatency, thread could not be formed, ~40% fine sand, brown			
_15	S4	11-15 18-22	2	1.0	Similar to S3		SILT	
_20	S5	15-14 17-20		1.1	Similar to S3	50		
_25	S6	20-14 21-21		0.9	~23.5 SILTY SAND (SM) Narrowly graded. Mostly fine sand, ~25% non-plastic fines, gray		SILTY	
2.0 IN. C OR-WE OH-WE EN-PEN EC-LEN	D SPL IGHT IGHT IETRA IGTH (IT SPOO OF ROE OF ROE TION LE OF REC	ON SA OS AN ENGTI OVER	AMPL ID HA IH OF RED S	MMER SAMPLER OR CORE BARREL	wash bori	ng	Φ GEI Consultants, Project 98217

ORING L					Rt 49' DATÉ START - FINISH 12/8/5 DATUM NGVD DRILLED BY Maine Test Boring	98 - 12/8/98		B817
ROUND							OTAL DEPTH Ft.) 59.0	Page 2 of 2
PTH	TYPE & NO.	SAMP BLOWS /6 IN.	PEN	REC	SOIL AND ROCK DESCRIPTIONS	FIELD TESTS		Remarks
30	-	25-11 14-15	2	0.9	SILTY SAND (SM) Narrowly graded. Mostly fine sand, ~20% non-plastic fines gray	s,		
35							SILTY SAND	
	S8	29-22 26-17	2		SILTY SAND (SM) Narrowly graded. Mostly fine sand, ~25% non-plastic fine 5% fine gravel, gray	es,		
40						40'		
	S9	32-21 46-73	2	0.9	SAND WITH SILT AND GRAVEL (SP-SM) Narrowly graded. Mostly fine sand, 30% sub-rounded and sub-angular gravel, 10% non-plastic fines, gray	d		
45	R1	1 min 1 min	4.5	0.3	0.5' thick cobble at 44'		GLACIAL TILL	
		1 min 1 min 1 min /0.5'			SAND WITH SILT AND GRAVEL (SP-SM) Narrowly graded. Mostly fine to medium sand, 15% sub-angular gravel, 10% non-plastic fines, gray (classification based on a sample collected from collapse borehole after coring, sample depth 46' to 48')	d		
49 50	R2	2 min 2 min 2 min 2 min 2 min 2 min		5	GRANITE Slightly weathered. Fractures dipping at 0, 10, 30, 40, 50 and 80 degrees from the horizontal, spaced from 1" to 7" RQD=12%			
54 55	R3	2 min 3 min 2 min 1 min /0.4'		3.4	GRANITE Slightly weathered. Fractures dipping at 30, 40, 50, and degrees from the horizontal, spaced from 1" to 7" apart, RQD=27%	80	BEDROCK	
57.4		2 min /0.6 3 min		1.6		1 59.0'		
60				1	Bottom of Boring 59.0'			
OWS P .0 IN. O OR-WE OH-WE	D SPI IGHT IGHT ETRA	IT SPOO OF ROE OF ROE TION LE	ON SA OS AN ENGTI	AMPL D HA H OF	MMER SAMPLER OR CORE BARREL			
D-LEN SPLIT S	GTH POO	OF RECO OF SOU N SAMP ED SAM	ND C LE	ORE S	SECTIONS > 4 IN./LENGTH CORED. %	Street Parkw	ay	Φ GEI Consultants, Inc Project 98217

BORING GROUND	LOCAT	TION _	550)+41;	Lt 21' DATE STA DATUM NGVD DRILLED B	RT - FINISH <u>10/29/98 - 1</u> BY <u>Maine Test Boring</u>	10/29/98			B818
GROUND	WAT	ER EL.		DAT	E LOGGED	Brian F. Jankauskas		TAL DEPTH)84.9		Page 1 of 3
DEPTH FT.	TYPE & NO.	SAMP BLOWS /6 IN.	LE PEN	REC ft.	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.		Remarks
-	S1	5-3 3	1.5	0.2	SAND WITH GRAVEL (SW) Mostly sand. 15% fine angular gravel brown, FILL.		11	FILL	-	
5 5	S2	2-3 5	1.5		SAND WITH SILT (SP-SM) Narrowly graded. Mostly fine sand, 10 brown	4.0' % non-plastic fines,		SAND WITH SILT		
E					a s	8'				
10 10 	S3	9-11 12	1.5	0.7	SILT (ML) rapid dilatency, thread could not be fo brown	rmed, ~40% fine sand,				
	S4	12-14 14-15		0.8	Similar to S3		- 1	SILT AND SILTY		
20 20	S5	15-17 18-24	2	0.9	Similar to S3		-	SAND		
25	S6	20-18 29-27		0.8	Similar to S3					
- 30					d					-
BLOWS I 2.0 IN. 0 WOR-WE WOH-WE	DD SPI EIGHT EIGHT IETRA	IT SPO OF ROE OF ROE TION LE	ON SA OS AN ENGTI	AMPL D HA H OF	MMER SAMPLER OR CORE BARREL	Notes: Cased (driven)	wash borir	ng		1
	NGTH (OF SOU N SAMP	ND C LE	ORE : S	RWIFLE SECTIONS > 4 IN./LENGTH CORED, % V-TORVANE	Broad Street	t Parkway			El Consultants, Inc. Project 98217

BORING LO	CAT	ION _	550 162)+41;	Lt 21' DATE STA DATUM NGVD DRILLED B	RT - FINISH 10/29/98 - 1 BY Maine Test Boring	10/29/98		B818
GROUND \	WATE	R EL.		DAT	E LOGGED E	BY Brian F. Jankauskas		TAL DEPTH) _ 84.9	Page 2 of 3
EPTH		SAMP			SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
	TYPE NO.	BLOWS /6 IN.	PEN ft.	REC ft.	Similar to S3		12313	DESCRIPT.	T T T T T T T T T T T T T T T T T T T
30		27-29 38-35	2	0.9	Similar to 53				
35		27-25 31-35	2	0.8	SILTY SAND (SM) Narrowly graded. I ~35% non-plastic fines, brown	Mostly fine sand,		SILT AND SILTY SAND	
_40	\$9	25-22 27-27	2	0.8	Similar to S3, ~30% fine sand orange in the lower 0.2'				
45	S10	20-18 25-30	2	0.8	Similar to S3, ~45% fine sand				
50	S11	14-17 21-25		0.9	Upper 0.2' - Similar to S3 Bottom 0.7' - SAND (SP) Narrowly graded. Mostly fine to medinon-plastic fines, brown to orange	50.5 um sand, <5%			
55 	S12	31-44 70 /0.2'	1.2	0.8	SAND (SP) Narrowly graded. Mostly 10% fine rounded gravel, 5% non-platorange Cobble from 56.2' to 56.5'	fine to medium sand, stic fines, brown to 57	4	SAND	
- - - - 60								SILTY SAND	
2.0 IN. O WOR-WE WOH-WE	D SPL IGHT IGHT ETRA	.IT SPO OF ROI OF ROI TION LI	ON SA OS AN ENGT	AMPL ID HA H OF	MMER SAMPLER OR CORE BARREL	Notes:			
	GTH (OF SOL MAS V	IND C	ORE	SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE	Broad Stree	et Parkway	,	Φ GEI Consultants, Inc Project 98217

BORING	S LOCATION ND ELEVATION	550 162		Lt 21' DATE STA DATUM NGVD DRILLED E	RT - FINISH 10/29/98 - BY Maine Test Boring	10/29/98			B818
GROUN	ND WATER EL.		DAT	E LOGGED	BY Brian F. Jankauskas		TAL DEPTH) 84.9		Page 3 of 3
DEPTH	SAMI		REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.		Remarks
FT.	8 NO. 1 /6 IN.	ft.	ft.			12010	D20011111		T CONTROLLED
_ 60 _ _ _	S13 25-22 20-23			SILTY SAND (SM) Narrowly graded. Mostly fine sand, ~2 gray	25% non-plastic fines,				
- - - - - -	S14 12-17 20-22	2	1.0	Similar to S13			SILTY SAND		
			:	× 2					
70 	S15 18-22 22-14	2	1.1	Similar to S13					
	S1655/0.1	' 0.1	0	Cobbles from 75.1' to 75.5' and 75.8' (75.0' to 76.3'				
-				Cobble from 79.0 to 79.3			GLACIAL TILL		
80	S17 58-10 100 /0.2'	1 1		SILTY SAND (SM) Narrowly graded. Mostly fine sand, ~: gray. Glacial till.	30 non-plastic fines,				
_ _ _ 85				Roller bit from 83.1' to 84.9', boulder of Boring	or possible bedrock 84.9		POSSIBLE BEDROCK		A)
							ē.		1
90									
2.0 IN WOR-V WOH-V PEN-PI	. OD SPLIT SPO WEIGHT OF RO WEIGHT OF RO	OON SA DS DS AND ENGTH	MPLI HAI OF S	MMER SAMPLER OR CORE BARREL	Notes:				
RQD-LI S-SPLI		JND CC PLE	RE S	SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway		Ф GEI	Consultants, Inc. Project 98217

ORING LO	OCAT ELEV	ION ATION	651+ 169.	75 19 8 [DATUM NGVD DRILLED	ART - FINISH <u>8/5/98- 8/6</u> BY <u>Maine Test Boring</u>		•	B1001
OUND \	WATE	ER EL.	<130	.2	DATE <u>9/10/98</u> LOGGED	BY <u>Brian F. Jankauskas</u>		TAL DEPTH)105.1	Page 1 of 4
РТН т. ;	TYPE & NO.	SAMP BLOWS /6 IN.	LE PEN	REC ft.	SOIL AND ROCK DESCR	RIPTIONS	FIELD TESTS	STRATUM DESCRIP.	Equipment Installation
0		14-15 13-13	2	1.2	0.35' Asphalt SAND (SP) Narrowly graded. Mostly fine sand, ~15% medium sand <5% non-plastic fines, brown. FILL.	0.35' , 15% coarse sand,		Asphalt FILL	Flush-mount road box in 1-inch- thick concrete sur face seal installed
5	S2	3-3 3-4	2	0.9	Upper 0.3' SAND (SW) Widely graded. Mostly fine to coarse s FILL. Lower 0.6' SAND (SP) Narrowly graded. Mostly fine sand, < coarse sand, dark brown to orange br	5.3' 5% medium to			1 1/2" ID PVC well riser.
10	S3	22-22 19-23	2	0.8	SAND WITH GRAVEL (SW) Widely graded. Mostly fine to coarse : 35% fine gravel, brown.	sand,			
15	S4	8-7 9-11	2	0.7	SAND (SP) Narrowly graded. Mostly medium san <5% non-plastic fines, 10% gravel, br			SAND AND SAND WITH GRAVEL	Backfill with cut- tings from 1' to 26.9'.
20	S5	13-15 16-22	2	0.5	SAND (SP) Narrowly graded. Mostly fine to media <10% non-plastic fines, brown.	um sand,			
25	S6	13-17 26-29	2	0.9	SAND (SP) Narrowly graded. Mostly fine sand, ~5 brown.	5% non-plastic fines,			Bentonite from
) IN. OE R-WEK)H-WEK	SPL GHT GHT	IT SPOO OF ROD OF ROD	ON S/ S S AN	AMPL ID HA		Notes: Cased (drive) wash bo	ring.		26.9' to 28.1'. Filter sand from 28.1' to 48.4'.
C-LENG D-LENG PLIT SI	TH (TH (POOI	F REC	OVER ND C LE	RED S ORE S		Broad Street	t Parkway		Φ GEI Consultants, Inc Project 98217

BORING L GROUND	OCATI	ON	169.8	75 19	S DATE START - FINISH_ DATUM NGVD DRILLED BY Maine Test	8/5/98- 8/6 Boring	5/98			B1001
GROUND	WATE	R EL.	<130).2	DATE 9/10/98 LOGGED BY Brian F. Jan	nkauskas		TAL DEPTH)105.1		Page 2 of 4
DEPTH FT.	TYPE & NO.	SAMPI BLOWS /6 IN	LE PEN	REC ft.	SOIL AND ROCK DESCRIPTIONS		FIELD TESTS	STRATUM DESCRIP.		Equipment Installation
30	S7	15-24 30-38	2	0.9	SAND (SP) Narrowly graded. Mostly fine sand, ~5% non-plasti light brown to orange.	ic fines,	Ш			1 1/2" ID PVC well screen from 29.6'
35 35 		33-56 49-45	2		SAND (SP) Narrowly graded. Mostly fine sand. ~5% non-plastic fines, dark gray, light gray, light brown, brown stratificatio at uneven thicknesses.	n	2			to 39.6'.
40 		33-43 53-56	2	0.9	Similar to S8.			SAND		
45 		29-36 43-39	2	0.7	Similar to S8, but gray/brown.			AND SAND WITH GRAVEL		Backfill boring with filter sand from 28.1' to 48.4'.
50 50 		31-31 29-32	2	0.9	Similar to S8, but gray/brown. (S12 driven at same depth as S11 to obtain sample for classification.)	е	ala.			
55 55 		15-11 13-14	2	1.4	Similar to S8.					Allow boring to collapse below 48.4'.
60			<u> </u>							
2.0 IN. OI WOR-WEI WOH-WEI	D SPLI IGHT C IGHT C ETRAT	T SPOO F ROD F ROD ION LE	ON S/ S S AN NGTI	AMPLI D HAI H OF S	MMER SAMPLER OR CORE BARREL					
	GTH O	F SOU! SAMPL	ND C LE	ORE S	SECTIONS > 4 IN./LENGTH CORED, %	Broad Stree	t Parkway		ΦG	El Consultants, Inc. Project 98217

ROUND ROUND	WATE	ATION ER EL.	169.8 <130	0.2	DATUM NGVD DRILLED E DATE 9/10/98 LOGGED E	BY <u>Maine Test Boring</u> BY <u>Brian F. Jankauskas</u>		TAL DEPTH) 105.1	Page 3 of 4		
EPTH	TYPE	SAMP	LE PEN	REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS"	STRATUM DESCRIP.	Equipment Installation		
FT. 60	& NO.	15-12 12-12	2	ft.	Similar to S8.						
65	S15	11-14 13-13	2	1.3	Similar to S8.			SAND AND			
70	S16	20-22		0.9	Similar to S8.			SAND WITH GRAVEL			
		22-29									
75	S17	20-23 31-38	2	0.8	Similar to S8.						
- - - - - -	S18	40-34 35-35		1.0	SAND WITH GRAVEL (SP) Narrowly graded. Mostly fine sand, 20 <5% non-plastic fines, light brown with stratification.	0% fine angular gravel, n 1/8" thick orange					
85	S19	31-23 26-32	2	1.2	SAND (SP) Narrowly graded. Mostly fine sand, < 5% fine angular gravel, light brown.	5% non-plastic fines,					
2.0 IN. C NOR-WE NOH-WE	DD SPI EIGHT EIGHT	LIT SPO OF ROD OF ROD	ON SA OS AN	AMPL ID HA		Notes:					
REC-LEN	NGTH (NGTH (SPOO	OF REC OF SOU N SAMP	OVER IND C	RED S ORE S		Broad Stree	t Parkway		Φ GEI Consultants, In Project 98217		

BORING	LOCA	TION	6514	-75 19		- B1001			
GROUND	WAT	ER EL.	<13	0.2	DATE 9/10/98 LOGGED E	3Y <u>Maine Test Boring</u> 3Y <u>Brian F. Jankauskas</u>		TAL DEPTH) 105.1	Page 4 of 4
DEPTH		SAMP	LE		SOIL AND ROCK DESCR	IPTIONS	FIELD	STRATUM	Equipment
FT.	TYPE & NO.	BLOWS /6 IN.	PEN ft.	REC ft,		II HONG	TESTS	DESCRIP.	Installation
90	S20	13-12 15-18		0.9	SAND WITH GRAVEL Narrowly graded . Mostly fine sand, 25 <5% non-plastic fines	% fine angular gravel,			
F									3
95					ODAY TIMO MICA CRANITE				
95.1		7 min			GRAY TWO-MICA GRANITE Slightly weathered fractures spaced ur				
F	R1	7 min	5	4.8	up to 10" apart, fractures dipping at 0, degrees from the horizontal. RQD=48.				
L		9 min	İ		degrees from the nonzontal. (QD=40.	370	1	DEDDOOK	i
E		8 min			5 2			BEDROCK	
L		9 min							
100.1	R2	/0.8 7 min	5.2		GRAY TWO-MICA GRANITE				
E		7 min			Slightly weathered fractures spaced ur up to 11" apart, fractures dipping at 0,	30, 45, 60, 80	= =		
E		6 min			degrees from the horizontal. RQD=70.	5%			
L		7 min			-				
105		8 min				105.1			
E-103					Bottom of Boring 1				
_									
							1		
 									
F									
110					V.				
Ŀ									
F									
上									
 									
115									10
E									
\Vdash									
E ·									
F									
120	Ц_						<u> </u>		
2.0 IN. 0 WOR-WE WOH-WE	DD SPI EIGHT EIGHT NETRA	IT SPO OF ROD OF ROD TION LE	ON SA OS AN ENGTI	AMPL D HAI H OF	MMER SAMPLER OR CORE BARREL	Notes:		=	
	NGTH SPOO	OF SOU N SAMP	ND C	ORE S	AMPLE SECTIONS > 4 IN./LENGTH CORED, % /-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway		Φ GEI Consultants, Inc. Project 98217

DNUC	WAT	ATION ER EL.	159.4	DA1	FUM NGVD DRILLED I FE LOGGED	BY <u>Maine Test Boring</u> BY <u>Brian F. Jankauskas</u>		TAL DEPTH	Page 1 of 3
EPTH		SAMP						.) 81.7	Fage 1013
FT.	TYPE	BLOWS /6 IN.		REC	SOIL AND ROCK DESCR	RIPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
0	8 NO.	1-1	ft.	ft.	Upper 0.5' - TOPSOIL, leaves and stic	cks 0.5'	1	TOPSOIL	
		1-1	2	0.7	Lower 0.2' - SAND (SP) Narrowly graded, Mostly fine sand.				
	100				Various graded, Mostly line saild. <5% fines, brown.				
		=		-	_				
5									
_	S2	16-15	2	0	No recovery, (stone in tip of spoon).				
		22-21							
	S3			1.0	SAND WITH GRAVEL (SW)				
		15-19			Widely graded. Mostly medium to co. 25% subangular gravel. <5% non-plas				
					January States and Sta				
10									
—:~	S4	14-7	2	1.0	Upper 0.2' - Similar to S3.		" =		
		6-8			Lower 0.8' - SAND (SP) Narrowly grad Mostly medium sand.	ded.			
	1				<5% non-plastic fines, light brown.				
15	1							SAND	
- "	S5	26-27		1.0	SAND WITH GRAVEL (SP) Narrowly			AND	
		30-33			Mostly medium sand, 30% fine angula <5% non-plastic fines, light brown.	ar to subangular gravel,		SAND	
	ř.				-5 % No.11 plastic lines, light brown.			GRAVEL	
20	Ш							1	
	S6	22-24 22-35	2	0.9	SAND (SP) Narrowly graded.				
		22-35			Mostly fine to medium sand, <5% non-plastic fines, light brown.				
					İ				
_25									= 1
	S7	25-24 25-33		0.7	SAND (SP) Narrowly graded. Mostly fine sand, <5% non-plastic fine	es light brown			
		-0-00			moony mo outine, so to from placed link	Jo, ngitt brottin			
									*
30							<u> </u>		
					IER FALLING 30 IN. TO DRIVE A	Notes:			
2.0 IN. O VOR-WE				AMPL	EK	Soil sample collected f		for asbestos	analysis.
VOH-WE	IGHT	OF ROD	AN SC			Cased (drive) wash bo	ring.		5
EC-LEN	GTH (OF REC	OVEF	REDS					
QD-LEN					SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER	Broad Stree	t Parkway	Ē	Φ GEI Consultants, In-
-UNDIS					GROUND WATER	Dioad Glice	u.n.		

BORING GROUNI					DATE START UM NGVD DRILLED BY	Maine Test Boring	=		B1002
GROUNI	D WATE	R EL.		DAT	E LOGGED BY	Brian F. Jankauskas		TAL DEPTH) 81.7	Page 2 of 3
DEPTH FT.	TYPE & NO.	SAMP BLOWS /6 IN.	LE PEN ft.	REC ft.	SOIL AND ROCK DESCRIPT	FIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
30	S8	26-33 37-40		1.0	SAND (SP) Narrowly graded. Mostly fine sand, <5% non-plastic fines,	light brown.			
35		18-23 30-49	2	0.9	SAND (SP) Narrowly graded. Mostly fine sand, <5% non-plastic fines,	light brown.	-		
40	S10	14-21 29-35	2	0.9	SAND WITH SILT (SP-SM) Narrowly g Mostly fine sand. ~10% non-plastic fines	raded. s, light brown.			
45		15-22 38-32		1.1	Similar to S10.			SAND AND SAND WITH SILT	
50 50 		14-14 15-16		1.5	Similar to S10.				
 55 	S13	11-12 12-14		1.6	Similar to S10.		1		
2.0 IN. WOR-W WOH-W PEN-PE	OD SPL /EIGHT (/EIGHT (IT SPO DF ROE DF ROE TION LE	ON S. OS OS AN ENGT	AMPL ID HAI H OF	ER PALLING 30 IN. TO DRIVE A ER MMER SAMPLER OR CORE BARREL	Notes:			
RQD-LE S-SPLIT		F SOU SAMP	ND C	ORE :	AMPLE SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway		Φ GEI Consultants, Inc. Project 98217

BORING L	ROUND ELEVATION 651+10 40N DATE START - FINISH 8/11/98-8/12/98 ROUND ELEVATION 159.4 DATUM NGVD DRILLED BY Maine Test Boring ROUND WATER EL. DATE LOGGED BY Brian F. Jankauskas TOTAL DEPTH							_	B1002		
ROUND	WATE	R EL.	139.4	DAT	E LOGGED BY Brian F. Jai	nkauskas		TAL DEPTH) _81.7	Page 3 of 3		
EPTH FT.	TYPE & NO.	SAMP BLOWS /6 IN.	LE PEN ft.	REC ft.	SOIL AND ROCK DESCRIPTIONS		FIELD TESTS	STRATUM DESCRIP.	Remarks		
60		14-14	2		Similar to S10.			SAND WITH SILT			
_65	S 15	13-20 22-22	2	0.9	SAND (SP) Narrowly graded. Mostly fine sand, <5% non-plastic fines, brown.			SAND			
_70	S16	10-12 16-22	2	1.2	SAND (SP) Narrowly graded. Mostly fine sand. <5% non-plastic fines, brown.						
_75	S17	14-18 18-25		0.9	SAND WITH GRAVEL (SP) Narrowly graded. Mostly fine sand ~10% coarse sand, 20% subangular gravel, 5% non-plastic fines, light	brown.		SAND WITH GRAVEL			
_80	S18	15-13 68- 76/0.3	1	1.2	SAND WITH GRAVEL (SW) Widely graded. Mostly fine to coarse sand,20% subangular to ang 5% non-plastic fines, light brown. (Weathered grav of spoon similar to bedrock sample from B1001.) Bottom of Boring 81.7'	ular gravel, el in tip 81.7 '					
_85											
90 LOWS F 2.0 IN. C	D SPL	IT SPO	ON S		ER FALLING 30 IN. TO DRIVE A Notes:						
VOH-WE PEN-PEN REC-LEN	EIGHT IETRA IGTH (IGTH (SPOO!	OF ROLL TION LE OF REC OF SOU N SAMP	OS AN ENGT OVER IND C	H OF RED S ORE: S	SAMPLER OR CORE BARREL AMPLE SECTIONS > 4 IN./LENGTH CORED, %	Broad Stree	t Parkway		Φ GEI Consultants, In Project 98217		

GEI Consultants, Inc.	TEST BORING LOG	PROJECT: Broad Street Parkway NUMBER: 98217 LOCATION: Nashua, NH	PAGE BORING NUMBER 1 B1004
BORING LOCATION: Sta 652+00 33N GROUND ELEV. (NGVD): 153.2' START / FINISH DATE: 05/01/01 GW DEPTH / ELEV.: 128.7' GW DATE / TIME: 05/01/01 (10:00)	TOTAL DEPTH: 42.0' SOIL BORING: 42.0' ROCK CORE: 0.0' DRILLED BY: MTB LOGGED BY: ALS	BLOWS PER 6 IN 140 LB. HAMMER FALLING 30 IN. TO SPOON SAMPLER NM - NOT MEASURED PEN - PENETRATION LENGTH OF SAMPLER OR CORE EREC - RECOVERY LENGTH OF SAMPLE RQO - LENGTH OF SOUND CORES > 4 IN. / LENGTH COI	BARREL
NOTES:		S - SPLIT SPOON SAMPLE A - AUGER SAMPLE U - UNDISTURBED SAMPLE	- MEASURED GWL - ESTIMATED GWL

ELEV. (ft)	DEPTH (ft)	TYPE and NUMBE	SPT N per 6 in		REC (In)	REMARKS	GWL	LITH.	USCS SOIL AND ROCK DESCRIPTIONS	STRATA	WELL
- 150	_	S1	3223	24	8	Boring adv. using 5 1/4" HSA. Drill rig - bouncing.			(S1) 0"-6" TOPSOIL: Fine sand and humus, roots, dark brown. 6"-8" (SP) NARROWLY GRADED SAND: Fine to medium sand, ~5% nonplastic fines, brown to brownish orange, FILL.		
- 145	-5 — -	S2	4 10 10 9	24	3	Rock in tip of split spoon.			(S2) (SP) NARROWLY GRADED SAND: Medium sand, -5% coarse sand, <3% nonplastic fines, brown, FILL.	-8.	
- 143	-10 —	S3	4 6 6 7	24	18				(S3) (SP) NARROWLY GRADED SAND: Stratified, fine to medium sand, ~3% to 5% coarse sand, light brown.		
- 140	-15 -15	S4	4 7 6 9	24	21				(S4) (SP) Similar to S3 except medium sand, occasional subrounded gravel to 1".		
135	-20	S5	6 9 13 14	24	20				(S5) (SP) NARROWLY GRADED SAND: Stratified, fine sand, <3% nonplastic fines, light brown with occassional orange lamina.		
- 130	-25 —	S6	5 10 9 11	24	20	Wet soil			(S6) (SP-SM) NARROWLY GRADED SAND WITH SILT: Stratified, fine sand, ~10% nonplastic fines, light brown to olive brown.		-
- 125	-30 —	S7	5 7 7	24	21	Wet soil			(S7) (SP-SM) Similar to S6.		
- 120	-35 —	S8	6 8 7 7	24	24	Wet soil			(S8) (SP-SM) Similar to S6.		
— 115											

$\overline{\Phi}$ GEI Consultants, Inc.	TEST BORING LOG	PROJECT: Broad Street Parkway NUMBER: 98217 LOCATION: Nashua, NH	PAGE BORING NUMBE 2 B1004	
BORING LOCATION: Sta 652+00 33N GROUND ELEV. (NGVD): 153.2' START / FINISH DATE: 05/01/01 GW DEPTH / ELEV.: 128.7' GW DATE / TIME: 05/01/01 (10:00)	TOTAL DEPTH: 42.0' SOIL BORING: 42.0' ROCK CORE: 0.0' DRILLED BY: MTB LOGGED BY: ALS	BLOWS PER 6 IN 140 LB. HAMMER FALLING 30 IN. SPOON SAMPLER NM - NOT MEASURED PEN - PENETRATION LENGTH OF SAMPLER OR COR REC - RECOVERY LENGTH OF SAMPLE RQD - LENGTH OF SOUND CORES > 4 IN. / LENGTH	E BARREL	•
NOTES:		S - SPLIT SPOON SAMPLE A - AUGER SAMPLE U - UNDISTURBED SAMPLE UF - UNDISTURBED SAMPLE, FIXED PISTON UO - UNDISTURBED SAMPLE, OSTERBERG	- MEASURED GWL	

ELEV. (ft)	DEPTH (ft)	TYPE and NUMBER	SPT N per 6 in	PEN (in)	REC (In)	REMARKS	GWL	LITH.	USCS SOIL AND ROCK DESCRIPTIONS	STRATA	WELL	
— 110	-40	S9	5566	24	24	Wet soil			(S9) (SM) SILTY SAND: Stratified, fine sand. ~20% to 25% nonplastic fines, olive brown. ===================================			
- 105	-45 —											
-	-50 —						der alle de Austria processos efficients in a contratament					- Adam province in address of the State of t
— 100 	-55 —											
- 95 -	-60 -	-					* * * * * * * * * * * * * * * * * * * *				-	
90												
85	-65 -											

GEI Consultants, Inc.	TEST BORING LOG	PROJECT: Broad Street Parkway NUMBER: 98217 LOCATION: Nashua, NH PAGE 1 OF B100							
BORING LOCATION: Sta 653 +57 6S GROUND ELEV. (NGVD): 169.3' START / FINISH DATE: 03/08/01 GW DEPTH / ELEV.: 121.5' GW DATE / TIME:	TOTAL DEPTH: 62' SOIL BORING: 62' ROCK CORE: 0' DRILLED BY: MTB LOGGED BY: CSM	BLOWS PER 6 IN 140 LB. HAMMER FALLING 30 IN. SPOON SAMPLER NM - NOT MEASURED PEN - PENETRATION LENGTH OF SAMPLER OR COR REC - RECOVERY LENGTH OF SAMPLE ROD - LENGTH OF SOUND CORES > 4 IN. / LENGTH ()	E BARREL						
NOTES: Groundwater measured after casing pulled	d from borehole.	S - SPLIT SPOON SAMPLE A - AUGER SAMPLE U - UNDISTURBED SAMPLE UF - UNDISTURBED SAMPLE, FIXED PISTON UO - UNDISTURBED SAMPLE, OSTERBERG	- MEASURED GWL						

EV. DEPTH	TYPE and NUMBER	SPT N per 6 in	PEN (in)	REC (In)	REMARKS	GWL	LITH.	USCS SOIL AND ROCK DESCRIPTIONS	STRATA	CHANG	_L
-					Boring advanced using 4" SSA			0"-2" ASPHALT (not sampled)			
65	S1	32212323	24	13	Frozen soil 0'- -4'			(S1) (SP) NARROWLY GRADED SAND: Mostly fine sand, <5% medium to coarse sand, <5% subrounded gravel to 3/8", light brown, FILL.	-5'		
-	S2	2323	24	12	Boring advanced using 4" case and wash			(S2) (SP) NARROWLY GRADED SAND: Stratified fine sand, <5% medium to coarse sand, <5% nonplastic fines, light brown, orange laminae.			
-10 -	S3	6 7 10 10	24	12				(S3) (SP-SM) NARROWLY GRADED SAND WITH SILT: Stratified fine sand, ~10% nonplastic fines, light brown, orange laminae.	54		
155 -15 -	S4	7 9 10 12	24	12				(S4) (SP-SM) Similar to S3.			
-20 -	S5	9 11 13 18	24	12				(S5) (SP-SM) Similar to S3.			
145	\$6 -	9 14 15 18	24	12				(S6) (SP-SM) Similar to S3.			
-30 -	S7	13 19 23 26	24	13				(S7) (SP-SM) Similar to S3.			
135 -35 -	S8	15 20 25 24	24	12				(S8) (SP-SM) Similar to S3.			The state of the s

GEI Consultants, Inc.	TEST BORING LOG	PROJECT: Broad Street Parkway NUMBER: 98217 LOCATION: Nashua, NH	2	B1005
BORING LOCATION: Sta 653 +57 6S GROUND ELEV. (NGVD): 169.3' START / FINISH DATE: 03/08/01 GW DEPTH / ELEV.: 121.5' GW DATE / TIME:	TOTAL DEPTH: 62' SOIL BORING: 62' ROCK CORE: 0' DRILLED BY: MTB LOGGED BY: CSM	BLOWS PER 6 IN 140 LB. HAMMER FALLING 30 IN. T SPOON SAMPLER NM - NOT MEASURED PEN - PENETRATION LENGTH OF SAMPLER OR COR REC - RECOVERY LENGTH OF SAMPLE RQD - LENGTH OF SOUND CORES > 4 IN. / LENGTH O	E BARREL	.0 IN O.D. SPLIT
NOTES: Groundwater measured after casing pulle	d from borehole.	S - SPLIT SPOON SAMPLE A - AUGER SAMPLE U - UNDISTURBED SAMPLE	- MEASUF	RED GWL
		UF - UNDISTURBED SAMPLE, FIXED PISTON UO - UNDISTURBED SAMPLE, OSTERBERG	- ESTIMA	TED GWL

ÉLEV. (ft)	DEPTH (ft)	TY ar NUM	PE nd IBER	SPT N per 6 in	PEN (in)	REC (in)	REMARKS	GWL	LITH.	USCS SOIL AND ROCK DESCRIPTIONS	STRATA	WELL
100	-40 —		S9	23 25 27 28	24	13	-			(S9)(SP) NARROWLY GRADED SAND: Stratified fine sand, ~5% nonplastic fines, light brown, orange laminae.		
125	-45 — -		S10	17 20 21 20	24	13				(S10) (SP) Similar to S9.		
120	-50		S11	14 23 25 30	24	12				(S11) (SP) Similar to S9		
115	-55 —		\$12	15 25 27 34	24	12				(S12) (SP) Similar to S9.		
110	-60 —		\$13	24 44 54 71	24	13	B.O.B.			(S13) (SP) Similar to S9.		
105	-65 —											
- 100				to servery on spanning to the servery of the server								10 m

BORIN	NG L	OCAT	ION 5	38+51	S 70	DATE STAF	RT - FINISH <u>8/3/98 - 8/</u> Y <u>Maine Test Boring</u>	3/98			B1201
GROL GROL	DNC	WATE	R EL.	1/3.	DAT	TUM NGVD DRILLED B' E LOGGED B	Y Brian F. Jankauskas		TAL DEPTH) 41.9		Page 1 of 2
DEPT	Ή		SAMP	LE		SOIL AND ROCK DESCRI	PTIONS	FIELD TESTS	STRATUM DESCRIP.		Remarks
FT.		TYPE 3 NO	BLOWS /6 IN.	PEN	REC R.		2.41	1.20.0	TOPSOIL		
°		S1	4-15 39-53	2	0.9	Upper 0.4' - TOPSOIL Lower 0.5'- GRAVEL WITH SAND (GW Widely graded. Mostly fine to coarse, r gravel, 40% fine to coarse sand, 5% no	rounded to subrounded		TOPSOIL	87	Gravel lodged in tip of spoon.
5		S2	3-4 6-6	2	0.7	SAND (SW) Widely graded. Mostly fine to medium gravel, <5% non-plastic fines.	sand, 5% fine			10	
- - - - - - - - - - - - -	0	S3	9-13 12-9	2	0.4	GRAVEL WITH SAND (GW) Widely graded. Mostly fine to coarse of coarse sand, <5% non-plastic fines, br		====	SAND AND SAND WITH		
	5	S4	20-10 9-9	2	0.6	SAND WITH GRAVEL (SW) Widely with Mostly fine to coarse sand, 40% fine to 45% non-plastic fines, brown.	graded. o coarse gravel,		GRAVEL		
2	20	S5	19-17 16-17		0.5	SAND WITH GRAVEL (SW). Widely Mostly fine to medium sand, ~20% finely plastic fines, brown.	graded. e gravel, <5% non-				
	25	S6	29-38 43-41		0.8	GRAVEL WITH SAND (GW) Widely Mostly fine to coarse gravel, ~40% fin ~5% non-plastic fines, brown.					
BLO 2.0 WOF WOF PEN	IN. (R-WI H-WI I-PEI	OD SP EIGHT EIGHT NETRA	LIT SPO OF RO OF RO ATION L	OON S DS DS AI ENG1	SAMPL ND HA TH OF	AMMER SAMPLER OR CORE BARREL	Notes: Cased (drive) wash bo	oring.			
REC RQE S-SF	C-LEN D-LEN PLIT	NGTH NGTH SPOC	OF REC	OVE JND (PLE	RED S CORE S	SAMPLE SECTIONS > 4 IN./LENGTH CORED, % SV-TORVANE QP-PENETROMETER // GROUND WATER	Broad Stree	et Parkwa	/	ФС	SEI Consultants, Inc. Project 98217

ROUND	WATE	ER EL.	1/3.	DAT	ATUM NGVD DRILLED BY Maine Test Boring LOGGED BY Brian F. Jankauskas		TAL DEPTH .) 41.9	Page 2 of 2	
EPTH	TYPE & NO.	SAMP BLOWS		REC	SOIL AND ROCK DESCRIPTIONS	FIELD TEST	STRATUM DESCRIP.	Remarks	
5T. 30		16-17 21-29			SAND (SW) Widely graded. Mostly fine to medium sand. <5% non- plastic fines, brown, bottom 0.2' is orange.				
- - - 35	S8	32-32 35-34	2	0.7	SAND (SP) Narrowly graded. Mostly fine sand, ~5% non-plastic fines,		wr I		
- - -					brown.				
- - -					* * *				
40 - -	S9	32-37 95-110 /0.4	1.9	1.0	SAND (SP). Similar to S8.	O'		Gravel lodged in tip of spoon	
-	#		\vdash	\vdash	Bottom of Boring at 41.9'	-			
- - - - 45						#0 ==0 to			
50									
_ _ _ _									
55									
60					I States				
2.0 IN. WOR-V	OD S VEIGH VEIGH	PLIT SP T OF RO T OF RO	OON DDS DDS A	SAMF	MER FALLING 30 IN. TO DRIVE A PLER AMMER F SAMPLER OR CORE BARREL			3.	
REC-LE RQD-LI	ENGTH ENGT	OF RE	COVE	COR	SAMPLE SECTIONS > 4 IN // ENGTH CORED %	reet Parkw	av	Φ GEI Consultants, Project 98217	

BORING I	LOCAT	ION 53	172 6	S 65		RT - FINISH 7/30/98 - 3Y Maine Test Boring	7/31/98	_	B1202
GROUND						3Y Brian F. Jankauskas		TAL DEPTH)70.0	Page 1 of 3
DEPTH FT.	TYPE	SAMPI BLOWS /6 IN	E	REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
0	S1	5-10	2	12	Upper 0.3' TOP SOIL	0.3'		TOPSOIL	
- - - - -	5	17-14	2		Middle 0.5' SAND WITH GRAVEL (SV Mostly fine to coarse sand with sub-an gravel. <5% non-plastic fines, brown. Lower 0.4' SAND (SW) Widely graded Mostly fine to coarse sand, <5% non-p	V) Widely graded. gular and angular	119		
5	S2	11-14 15-14	2	0.9	Cobble from about 4' to 4.4'. SAND WITH GRAVEL (SW) Widely g Mostly medium to coarse sand with fir	e subrounded to			0
	S 3	10-24 19-13	2	1	angular gravel, <5% non-plastic fines, Upper 0.5' SILT (ML) Non-plastic fines, 10% fine rounded to Maximum size 1/2". Lower 0.5' SAND (SW) Widely graded Mostly medium to coarse sand, <5% r	o subrounded gravel.			
15 15 	S4	11-12 14-21	2	0.8	SAND WITH GRAVEL (SW) Widely g Mostly medium to coarse sand, 40% f <5% non-plastic fines, gray-brown.	raded. îne gravel,		SAND AND SAND WITH GRAVEL	
20 	\$5	26-31 59- 38/ 0.2	1.7	1	SAND WITH GRAVEL (SP) Narrowly Mostly medium to coarse sand, 25% sub-rounded gravel, <5% non-plastic Boulder 21.5 to 24'	fine sub-angular to	ut.		Fractured gravel in tip of spoon.
25 25 	S6	47-40 34- 50/0.3		0.9	SAND WITH GRAVEL (SW) Widely of Mostly medium to coarse sand, 40% plastic fines, gray-brown. Cobble 26.5 to 27'	graded. fine gravel, <5% non-			
11					IER FALLING 30 IN. TO DRIVE A	Notes:			
REC-LEN	EIGHT EIGHT NETRA NGTH (OF ROD OF ROD TION LE OF REC	S AN S AN NGTI OVER	D HA H OF ED S	MMER SAMPLER OR CORE BARREL AMPLE	Cased (driven) wash b	oring.	1	Φ GEI Consultants, Inc.
RQD-LEN S-SPLIT	SPOO	N SAMP	LE	S	SECTIONS > 4 IN./LENGTH CORED. % v-TORVANE Qp-PENETROMETER GROUND WATER	p-PENETROMETER Broad Street Parkway Project 98217			

ORING L	OCAT	ION <u>53</u>	8+28	S 65		T - FINISH - 7/30/98 - 7	7/31/98		B1202
ROUND ROUND	WATE	ATION R EL.	172.6	DAT DAT	TUM NGVD DRILLED BY LOGGED BY	Maine Test Boring Brian F. Jankauskas		TAL DEPTH) 70.0	Page 2 of 3
PTH FT.	TYPE	SAMPI		REC	SOIL AND ROCK DESCRIF	PTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
30		23-24 32-37	2	li	Upper 0.6' SAND WITH GRAVEL (SW) Mostly medium to coarse sand, 40% fin <5% non-plastic fines, gray-brown. Lower 0.1' SAND (SP) Narrowly graded Mostly fine sand, <5% non-plastic fines	e angular gravel,			
35	S8	44-66 90	1.5	0.8	SAND (SP) Narrowly graded. Mostly fine sand, <5% non-plastic fines brown.	;, <5% fine gravel,			
_40	S9	48-80 90	1.5	0.8	SAND WITH GRAVEL (SW) Widely gr Mostly medium to coarse sand, ~15% fine angular gravel, <5% non-pla				
_45	S10	66-59 84-52		0.9	SAND WITH GRAVEL (SW) Widely gr Mostly medium to coarse sand, 20% fi 10% coarse gravel, <5% non-plastic fil	ne sub-angular gravel,		SAND AND SAND WITH GRAVEL	
_50	S1	31-35 36-35	2	0.7	SAND WITH GRAVEL (SW) Widely g Mostly medium to coarse sand, 35% f sub-angular gravel, <5% non-plastic fi	ine			
_55	S1.	2 41-27 34-33		0.7	GRAVEL WITH SAND (GW) Widely g Mostly fine to coarse angular gravel, 2 <5% non-plastic fines, gray/brown.	graded. 25% sand,			
2.0 IN. VOR-W VOH-W	OD SF /EIGHT /EIGHT	CLIT SPO OF RO OF RO ATION L	DON S DS A DS A ENG	SAMP ND H. TH OF	AMMER F SAMPLER OR CORE BARREL	Notes:			:
RQD-LE S-SPLIT	NGTH SPOC	OF SO OF SAM SED SAI	UND : PLE	CORE	SAMPLE E SECTIONS > 4 IN./LENGTH CORED, % SV-TORVANE Qp-PENETROMETER V GROUND WATER	Broad Stre	et Parkwa	у	Φ GEI Consultants, Inc Project 98217

BORING	LOCAT	ION 5	38+28	S 65	DATE START - FINISH_	7/30/98 -	7/31/98		B1202
GROUND GROUND	ELEV.	ATION	172.6	DA	TUM NGVD DRILLED BY Maine Test	Boring ikauskas		TAL DEPTH 70.0	Page 3 of 3
DEPTH FT.	TYPE	SAMP BLOWS		REC	SOIL AND ROCK DESCRIPTIONS		FIELD TESTS"	STRATUM DESCRIP.	Remarks
60	\$13	17-30 55-49			Upper 0.5' SAND (SP) Narrowly graded. Mostly fine sand, 5% fine to coarse gravel, <5% fin Lower 0.4' GRAVEL WITH SAND (GW) Widely gra Mostly angular fine gravel, 15% fine to coarse sand non-plastic fines, grey to orange.	ded.			
65 65 	S14	34-57 45-38		0.8	GRAVEL WITH SAND (GW) Widely graded. Mostly fine angular gravel, 15% sand, <5% non-pla gray/brown.	stic fines			
						70.0			
70	 	-	-	-	Bottom of Boring 70.0'	70.0	-		
85 									
90				•					
BLOWS 2.0 IN. (WOR-W	OD SPI EIGHT EIGHT NETRA	LIT SPO OF ROI OF ROI TION LI	ON S DS DS AN ENGT	AMPL ID HA H OF	MMER SAMPLER OR CORE BARREL				
	NGTH SPOO	OF SOL N SAMF	JND C	ORE S	SECTIONS > 4 IN./LENGTH CORED. %	Broad Stree	et Parkway		Φ GEI Consultants, Inc. Project 98217
_									

ORING LO	OCAT	ION <u>53</u>	8+40	N 22	DATE STAR	T - FINISH <u>8/4/98 - 8/</u> Maine Test Boring	4/98		B1203
ROUND I	WATE	R EL.	1/0.5	DAT	TTUM NGVD DRILLED BY LOGGED BY	Brian F. Jankauskas		TAL DEPTH) 32.0	Page 1 of 2
РТН	TYPE	SAMPL BLOWS /6 IN.		REC	SOIL AND ROCK DESCRIF	PTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
-т. <u>Г</u>	S1	4-5	2	0.0	Upper 0.4' TOPSOIL	0.4'		TOPSOIL	
_5	S2	9-10 2-2 1-1	2	0.5	Lower 0.5' SAND (SW) Widely graded. Mostly fine to coarse so <5% non-plastic fines, brown to orange black-stained soil. FILL. GRAVEL WITH SAND (GP) Narrowly graded. Mostly fine to coarse 35% fine sand, <10% non-plastic fines,	with lenses of angular gravel,			
_10	\$3	8-6 7-6	2	0	No recovery. Sample S4 driven at sam			FILL	
	S4	Note 2	2	0.5	SAND WITH GRAVEL (SP) Narrowly g medium sand, 35% gravel, ~5% non-p Lower 0.1 is stained black. FILL.	graded. Mostly lastic fines, brown.	,,		
15	S5	5-6 7-7	2	0.9	SAND (SP) Narrowly graded. Mostly fine sand, <5% non-plastic fine	s, light brown.		SAND	
20	S6	13-15 15-19		1.1	SAND WITH SILT (SP-SM) Narrowly Mostly fine sand, ~10% non-plastic fin	graded. es, gray.		AND SAND WITH SILT	
- - - - 25 -	S7	21-24 23-25		0.7	Similar to S6.				
30 BLOWS 1 2.0 IN. 0 WOR-WI	OD SP EIGHT	OF RO	DON S	SAMP		Notes: 1) Cased (driven) wa 2) Sample S3 driven to obtain a sample fo	from 10' to	n 12'. Samole	e S4 driven from 11' to 1 unts disregarded).
PEN-PE	NETR NGTH NGTH SPOC	OF REC OF SO OF SO ON SAM	ENG COVE UND PLE	TH OF RED CORE	SAMPLER OR CORE BARREL	Broad Stre	eet Parkwa	ау	Φ GEI Consultants, In Project 98217

BORING I	LOCAT	ION 5	38+40 170 5	N 22	DATE STAF	RT - FINISH <u>8/4/98 - 8</u> BY <u>Maine Test Boring</u>	/4/98	_	B1203
GROUND	WATE	R EL.	170.0	DAT	ATUM NGVD DRILLED E LOGGED E	Brian F. Jankauskas	TO (Ft.	TAL DEPTH) 32.0	Page 2 of 2
DEPTH	TYPE & NO.	SAMP BLOWS /6 IN.		REC n	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
FT. 30		18-22 29-33	2		SAND (SP) Narrowly graded. Mostly fine sand, 5% gray.	6 non-plastic fines,			
- - - - - -					Bottom of Boring				
- - - -		fi *							
								1	
_ _ _ _ _ _ _									
2.0 IN. 0 WOR-WI WOH-WI	DD SPI EIGHT EIGHT NETRA	LIT SPO OF ROI OF ROI TION LI	ON S OS OS AN ENGT	AMPL ID HA H OF	MMER SAMPLER OR CORE BARREL	Notes:			
REC-LEF RQD-LEF S-SPLIT U-UNDIS	NGTH SPOO	OF SOU N SAMP	IND C	ORE S	AMPLE SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway		Φ GEI Consultants, Inc. Project 98217

RING L	OCAT	TION 538+35 N 145 DATE START - FINISH 8/4/98 - 8/4/98 VATION 170.6 DATUM NGVD DRILLED BY Maine Test Boring TOTAL DEPTH				_	B1204		
OUND	WATE	R EL.	<136	1 D	ATE 11/19/98 LOGGED B	Y Brian F. Jankauskas		TAL DEPTH) 37.0	Page 1 of 2
тн	TYPE	SAMP	LE	REC	SOIL AND ROCK DESCRI	PTIONS	FIELD TEST	STRATUM DESCRIP.	EQUIPMENT INSTALLATION
	S1	1-3 3-4	2		Upper 0.3' TOPSOIL Lower 0.3' SAND (SP) Narrowly grade Mostly fine sand, <5% non-plastic fines brown, roots.	0.3 ' d. , light		TOPSOIL	Standpipe installed in concrete surface seal (2.9' stickup)
5	S2	7-7 8-9	2	0.8	SAND (SP) Narrowly graded. Mostly fine sand, <5% non-plastic fines and gray layers, alternating at uneven	s, orange ntervals.		SAND	1 1/2" ID PVC well installed
10	S3	7-7 9-9	2	0.7	Similar to S2. Lower 0.3' of sample is	gray.		AND SAND WITH SILT	Filler sand from 0.8' to 20.8'
15	S4	12-13 14-17		0.8	SAND WITH SILT (SP-SM) Narrowly Mostly fine sand, ~10% non-plastic fin	graded. es, gray.			
20	S5	10-14 18-22		0.8	Upper 0.5' SAND (SP) Similar to S2. Lower 0.3' SAND WITH SILT (SP-SM) Similar to S4.			Bentonite seal from 20.8' to 23.4'
25	Se	16-1 20-2		0.8	SAND (SP) and SAND WITH SILT (Similar to S2 and S4, respectively, in	SP-SM) 0.1' to 0.3'-thick layers.			Filler sand installed from 23.4' to 35.2'
0 IN. DR-W	OD SF	PLIT SP	OON:	SAMP	MER FALLING 30 IN. TO DRIVE A PLER AMMER	Notes: Cased (drive) wash b	poring.		1.5" ID slotted PVC screen from 24.5' to 34.5'
N-PE C-LE QD-LE SPLIT	NETR NGTH NGTH	ATION I	LENG COVE UND IPLE	TH OI RED CORE	SAMPLER OR CORE BARREL SAMPLE E SECTIONS > 4 IN./LENGTH CORED., % SV-TORVANE Qp-PENETROMETER V. GROUND WATER	Broad Stre	eet Parkwa	ау	Φ GEI Consultants, In Project 98217

BC	RING	LOCAT	ION 5	38+35	N 14		RT - FINISH 8/4/98 - BY Maine Test Boring	8/4/98			B1204
GF	ROUNE) WAT	ER EL.	170.0	DAT	TE LOGGED E	Brian F. Jankauskas	TO (Ft.	TAL DEPTH)37.0		Page 2 of 2
	PTH	TYPE & NO.	SAMP BLOWS /5 IN.	LE PEN	REC ft.	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.		EQUIPMENT INSTALLATION
	30		14-19 25-25	2		SAND WITH SILT (SP-SM) Narrowly graded. Mostly fine sand, -10% non-plastic fines, gray with oran	ge layers.				1.5" ID slotted PVC screen from 24.5' to 34.5'
	_35	S8	18-26 26-28		0.7	SILTY SAND (SM-SW) Narrowly grad Mostly fine sand, 20% non-plastic fine	s. 37.0				Boring collapsed from 35.2' to 37'.
F		Ш				Bottom of Boring 3	37.0'				
	_40										E 6
	-										
	_										
	_										
					_						
									ı		
W W Pt	2.0 IN. (OR-WE OH-WE EN-PEN	OD SPI EIGHT EIGHT NETRA	LIT SPO OF ROI OF ROI TION LE	ON SA OS AN ENGTI	AMPL ID HA H OF		Notes:	A			4.5
Ri S-	QD-LEI SPLIT	NGTH SPOO		ND C	ORE:	SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	et Parkway		ΦG	El Consultants, Inc. Project 98217

ORING L	ELEVA	TION 1	71.0	DAT	JM NGVD DRILLED BY	Maine Test Boring		TAL DEPTH	B1205
ROUND	WATE	R EL.	1	DAT		Brian F. Jankauskas) 32.0	Page 1 of 2
EPTH FT.	TYPE & NO.	SAMPL BLOWS / 6 IN	E PEN R.	REC	SOIL AND ROCK DESCRIP	TIONS	FIELD TEST	STRATUM DESCRIP.	Remarks
0	S1	1-1 1-2	2		SAND (SW) Widely graded. Mostly fine to coarse sa <5% non-plastic fines, light to dark brow	and, ~10% fine gravel, n. FILL.			
5	S2	3-4 2-4	2		Upper 0.6' - Organic Sand. Remnant t Lower 0.2' SAND (SP) Narrowly graded. Mostly fine sand, <10 light brown. FILL.			FILL	
10	S3	8-7 9-11	2	0.7	SILTY SAND (SM) Narrowly graded. Mostly fine sand, ~20% non-plastic fine brown, brown, and orange layers.	10.0'			
15	S4	11-11 13-19	2	0.8	Similar to S3.			SILTY SAND AND SAND WITH SILT	
- - 20 -	S5	11-14 13-17	2	0.8	Similar to S3.		П		
25	S6	15-17 23-23		0.8	Similar to S3.				
2.0 IN. WOR-W	OD SP EIGHT FIGHT	LIT SPO OF RO	DS A	SAMP ND H	AMMER	Notes: Cased (drive) wash b	oring.		
REC-LE	NGTH NGTH SPOC	OF REC OF SOU N SAMI	OVE JND (PLE	RED : CORE :	F SAMPLER OR CORE BARREL SAMPLE E SECTIONS > 4 IN./LENGTH CORED, % SV-TORVANE QP-PENETROMETER V GROUND WATER	Broad Stre	et Parkwa	ау	Φ GEI Consultants, In Project 98217

BORING	LOCAT	ION 5	38+61	N 134	4 DATE STA UM <u>NGVD</u> DRILLED E	RT - FINISH <u>8/4/98 - 8/</u> Y <u>Maine Test Boring</u>	4/98		B1205
GROUND	WATE	R EL.	17 1.0	DAT	E LOGGED E	BY Brian F. Jankauskas		TAL DEPTH 32.0	Page 2 of 2
DEPTH		SAMP	LE		SOIL AND ROCK DESCR	IPTIONS	FIELD	STRATUM	
FT.	TYPE & NO.	BLOWS /6.IN.	PEN ft,	REC ft.			TEST	DESCRIP.	Remarks
_ 30	S7	22-24 25-34	2	0.7	Similar to S3, but more orange color.				
F						32.0			-
L					Bottom of Boring at	32.0			
 									=
F			:						
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2.0 IN. (OD SPI	LIT SPO	ON S		IER FALLING 30 IN. TO DRIVE A ER				
WOR-WI	EIGHT	OF ROD	AN SC	ID HA	MMER				36.5
PEN-PE	NETRA NGTH (TION LE	ENGT OVEF	H OF RED S	SAMPLER OR CORE BARREL AMPLE				
	NGTH :	OF SOL	IND C	ORE	SECTIONS > 4 IN./LENGTH CORED, % v-TORVANE Qp-PENETROMETER	Broad Stree	t Parkway		Φ GEI Consultants, Inc. Project 98217
U-UNDIS	TURB	ED SAM	IPLE		GROUND WATER	1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			and a final section

RING L ROUND ROUND	ELEVA	NOITA	15	7.7	Rt 31' DATE STAR DATUM NGVD DRILLED BY LOGGED BY	Maine Test Boring Brian F. Jankauskas	TO	TAL DEPTH 22.0	Page 1 of	1
РТН	TYPE & NO.	SAMPI BLOWS /5 IN.	E PEN	REC	SOIL AND ROCK DESCRIP	PTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks	
т. <u> </u>	S1	76 IN. 2-1		1.0	Upper 0.4' - TOPSOIL	0.8'		TOPSOIL	3	
		2-1			Lower 0.6' - SAND (SP) Narrowly grade medium sand, <5% non-plastic fines, y	ed. Mostly fine to				
5	S2	1-2 3-5	2	1.2	SAND (SP) Narrowly graded. Mostly file <5% non-plastic fines, brown.	ne to medium sand,		SAND		
		ı		Œ	e e					
_10	S3	5-6 8-9	2	0.8	SAND (SP) Narrowly graded. Mostly fi <5% non-plastic fines, brown.	ine to medium sand,				
					I	14.0				
15 :	S4	10-11 14-20		0.8	SAND WITH SILT (SP-SM) Narrowly of sand, 10% non-plastic fines, gray.	graded. Mostly fine				
								SAND WITH SILT		
_20	S5	12-13 16-17	2	0.9	SAND WITH SILT (SP-SM) Narrowly sand, 10% non-plastic fines, gray.	graded. Mostly fine				
			igdash	\downarrow	Bottom of boring 2	22.0')'l			
25										
. 30		1								
BLOWS 2.0 IN. VOR-W VOH-W PEN-PE	OD SP EIGHT EIGHT NETR/	LIT SPO OF RC OF RC ATION L	DON: DS DS A ENG	SAMP .ND H. TH OF	AMMER F SAMPLER OR CORE BARREL	Notes: Auger 0' to 5' Case (driven) wash 5	' to 22'			= 1 ₁
REC-LE	NGTH NGTH	OF RE	UND	RED CORE	SAMPLE ESECTIONS > 4 IN./LENGTH CORED. % SV-TORVANE Qp-PENETROMETER	Broad Stre	et Parkwa	у	Φ GEI Consult Project 98	ants, Inc 3217

ROUND	ELEV/	ATION	149 123		34 DATE START - FINIS DATUM NGVD DRILLED BY Maine I DATE 11/19/98 LOGGED BY Brian F	Test Boring	TO	TAL DEPTH	B1501 Page 1 of 2
EPTH	ı .	SAMP	LE	T			(Ft. FIELD	STRATUM	1
FT.	TYPE & NO.	BLOWS /6 IN.	PEN	REC	SOIL AND ROCK DESCRIPTIONS		TESTS	DESCRIP.	Remarks
	S1	2-3 2-3	2		Upper 0.3' - TOPSOIL Middle 0.5' - SAND (SP) Narrowly graded. Mos 5% non-plastic fines, brown, FILL. Lower 0.5' - SAND (SP) Narrowly graded. Mos 5% ash, 5% non-plastic fines, black with red ler	tly fine sand,		TOPSOIL FILL	Roadbox installe in 1' thick concre surface seal
_5	S2	1-1 1-2	2		Upper 1.1' - SAND (SP) Narrowly graded, Most 5% ash, <5% non-plastic fines, black, FILL. Lower 0.5' - SAND (SP) Narrowly graded. Mos <5% non-plastic fines, brown.	6'	1.		1 ½" ID PVC riser from 0' to 2
_10	\$3	3-4 4-5	2		SAND (SP) Narrowly graded. Mostly fine sand plastic fines, brown.	, <5% non-			Cuttings from 1' to 15'
_15	S4	7-11 13-16	2		SAND (SP) Narrowly graded. Mostly fine sand plastic fines, brown.	l, <5% non-		SAND	Bentonite seal from 15' to 18'
_20	S5	8-15 15-19			SAND (SP) Narrowly graded. Mostly fine sand plastic fines, brown.	I, <5% non-			Filter sand from 18' to 30'
_25	S6	14-10 12-16		0.6	SAND (SP) Narrowly graded. Mostly fine to m 5% fine angular gravel, <5% non-plastic fines,	edium sand, brown.			screen from 20' to 30'
2.0 IN. 0	OD SPL EIGHT	IN 140 LIT SPO OF ROE OF ROE	ON S	AMPL	ER Case (c	Auger 0' to 5' driven) wash 5'	to 32'		-
EC-LEN QD-LEN -SPLIT	NGTH (NGTH (SPOO!	OF REC	OVER IND C	RED S. ORE :	SAMPLER OR CORE BARREL AMPLE SECTIONS > 4 IN./LENGTH CORED, % /-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway		Φ GEI Consultants, I Project 98217

BORING I	DRING LOCATION 212+19 W 44 ROUND ELEVATION 149.7 DATUM NGVE				W 44 DATE STAR	T - FINISH 11/12/98-11	/12/98		1501
GROUND	ELEV WATE	ATION ER EL.	123	9.7 3.0		/ <u>Maine Test Boring</u> / <u>Brian F. Jankauskas</u>		TAL DEPTH) 32.0	Page 2 of 2
DEPTH	TYPE	SAMP		REC	SOIL AND ROCK DESCRI	PTIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
5T. 30	TYPE & NO.	8-8 13-17	2	1 ft.	Upper 0.9' - SAND (SP) Narrowly grade medium sand, <5% non-plastic fines, b Middle 0.2' - SILTY SAND (SM) Narrow fine sand, ~30% non-plastic fines, gray	rown. rly graded. Mostly		SAND	
35					Lower 0.1' - Similar to Upper 0.9' Bottom of Boring 32				
40									
50									
55									
2.0 IN. WOR-W WOH-W	OD SI VEIGH VEIGH ENETR	PLIT SPO TOF RO TOF RO ATION I	DON S DS A DS A ENG	SAMF .ND H TH O	IMER FALLING 30 IN. TO DRIVE A PLER AMMER F SAMPLER OR CORE BARREL SAMPLE	Notes:			
RQD-LE S-SPLIT	ENGTH T SPO	OF REI OF SO ON SAM BED SA	UND	COR	SAMPLE E SECTIONS > 4 IN./LENGTH CORED. % SV-TORVANE	Broad Stre	et Parkwa	ly .	Φ GEI Consultants, Inc. Project 98217

ORING L	ELEV	ATION	1	44.0	DATUM NGVD DRILLED E	RT - FINISH 11/12/98-1 3Y Maine Test Boring				B1502
ROUND	WATE	ER EL.		- DA	LOGGED E	Brian F. Jankauskas		TAL DEPTH) 27.0		
EPTH FT.	TYPE	SAMP	PEN	REC	SOIL AND ROCK DESCR	IPTIONS	FIELD TESTS	STRATUM DESCRIP.		Remarks
	S1	2-1	2	1.8	Upper 1.0' - TOPSOIL		- 1/1- 1	TOPSOIL		
		2-3			Lower 0.8' - SAND (SP) Narrowly grad medium sand, <5% non-plastic fines, I					
_5	S2	3-3 3-4	2	1.5	SAND (SP) Narrowly graded. Mostly f 5% non-plastic fines, brown with orang		= 1	SAND		
_10	S3	7-10 12-13	2	0.7	Similar to S2, but brown			1		
_15	S4	11-10 11-16		1.0	Upper 0.8' - SAND (SP) Narrowly grad medium sand, <5% non-plastic fines, Lower 0.2' - SAND (SP) Narrowly grad 5% non-plastic fines, brown.	brown.				
_20	S 5	30-23 16-19		0.7	SAND WITH GRAVEL (SP) Narrowly medium sand, 20% rounded gravel, 5 brown.		2			
_25	S6	10-8 10-12	2	0.3	SAND WITH GRAVEL (SP) Widely gr coarse sand, 25% rounded gravel, <5 brown.	raded. Mostly fine to % non-plastic fines,	1			
30 LOWS F 2.0 IN. O VOR-WE VOH-WE	D SPL	.IT SPO OF ROD	ON S OS	AMPL		Notes: Auger 0' to 5' Case (driven) wash boo	ring 5' to 2	27'		
EN-PEN EC-LEN QD-LEN	ETRA GTH (IGTH (TION LE	ENGT OVER	H OF RED S ORE	SAMPLER OR CORE BARREL	Broad Street	t Parkway			i Consultan

BORING LO	ING LOCATION 512+12 R 66 DATE START - FINISH 7/23/98 - 7/24/98 UND ELEVATION 169.5 DATUM NGVD DRILLED BY Maine Test Boring LOCATION 169.5 DATUM NGVD DRILLED BY Maine Test Boring					B1901			
GROUND I	ELEVA WATEI	TION R EL.	169.5		DATE LOGGED BY	Brian F. Jankauskas		72.1	Page 1 of 3
DEPTH	TYPE	SAMPL BLOWS	E PEN	REC	SOIL AND ROCK DESCRIP	TIONS	FIELD TESTS	STRATUM DESCRIP.	Remarks
FT. 0	S1	1-2 2-2	2		Upper 0.8' TOP SOIL Lower 0.6', SAND (SW) Widely graded. Mostly fine to medium sand, brown, <5%	0.8' 6 fines.		TOPSOIL	
5	S2	5-5 4-6	2	0.8	SAND (SP) Narrowly graded. Mostly fine sand, 5-10% coarse sand, 5 gravel, <5% fines, gray-brown.	% rounded coarse			
- - - - 10	S3	12-8 9-9	2	0.9	SAND (SP) Narrowly graded. Similar to Coarse sand located in the upper 0.2' of	o above. of sample.		SAND AND SAND WITH GRAVEL	
15	S4 S5	7-7 12-14 10-13 -17			Upper 0.5' SAND (SP) Narrowly grade Mostly fine sand. <5% fines, light gray- Lower 0.6' SAND (SW) Widely graded Mostly fine to medium sand, <5% fines	-brown when wet.		н	
20	S6	19-17 21-19		0.8	gray-brown when wet. SAND (SW) Widely graded. Mostly fine to coarse sand, 5% rounded brown with an orange layer ~2" thick.				
25	S7	23-30 39-39		0.4	SAND WITH GRAVEL (SW) Widely g Mostly medium to coarse sand, 15% r fine gravel. <5% fines, brown.	raded. rounded to angular			
2.0 IN. WOR-W WOH-W PEN-PE	OD SP EIGHT EIGHT NETR/	OF ROATION L	DON S DS A .ENG	SAMF ND H TH O	AMMER F SAMPLER OR CORE BARREL	Notes: Cased (driven) wash 53.4' to ground wate	boring.	etion of boring	
ll pecule	NGTH NGTH SPOC	OF REG OF SO N SAM	COVE UND PLE	RED	SAMPLE E SECTIONS > 4 IN./LENGTH CORED, % SV-TORVANE Qp-PENETROMETER V. GROUND WATER	Broad Stre	eet Parkwa	зу	Φ GEI Consultants, Inc. Project 98217

BORING L				-12 R		RT - FINISH <u>7/23/98- 7</u> Y <u>Maine Test Boring</u>	/24/98			B1901
GROUND GROUND					DATUM NGVD DRILLED B DATE LOGGED B	Y Brian F. Jankauskas		TAL DEPTH)72.1		Page 2 of 3
DEPTH	TYPE	SAMP BLOWS /6 IN	LE	REC R.	SOIL AND ROCK DESCRI	PTIONS	FIELD TESTS	STRATUM DESCRIP.		Remarks
90 ST.	& NO.	20-18 16-17	2	0.5	SAND WITH GRAVEL (SW) Widely gr Mostly medium to coarse sand, ~15% sub-angular gravel, <5% non-plastic fir	rounded to				
 35 	S9	18-28 36-24	2	0.7	SAND WITH GRAVEL (SW). Similar t	to S8.				
40	S10	22-26 26-34		0.8	SAND (SW). Widely graded. Mostly medium to coarse sand, 5% fin <5% non-plastic fines, brown.	e gravel,				
45	S11	18-17 19-20		0.2	SAND WITH GRAVEL (SW). Similar to S8.					
50 50	S12	12-13 17-21	2	0.0	No recovery.					
		18-25 28-34	2 2		Upper 0.9' SAND (SP). Narrowly grad Mostly fine sand, <5% non-plastic fine orange discoloring at 0.6'. Lower 0.1' SILT WITH SAND (ML). Rapid dilatancy, low toughness, non-planting sand, gray-brown. SILT (ML)	es, light brown with 53.5' blastic,		CU T		
- - - - -		29-30			Rapid dilatancy, low toughness, non-p 10% fine sand, gray-brown.	⊳lastic, ~58.5		SILT		
60 BLOWS F 2.0 IN. 0					MER FALLING 30 IN. TO DRIVE A	Notes:	<u> </u>		1	
WOR-WE WOH-WE PEN-PEN	EIGHT EIGHT NETRA	OF RO	DS DS AN ENGT	ND HA	MMER SAMPLER OR CORE BARREL					1
REC-LEN RQD-LEN S-SPLIT	NGTH SPOO	OF SOU N SAME	JND C	ORE S	SAMPLE SECTIONS > 4 IN./LENGTH CORED, % IV-TORVANE Qp-PENETROMETER GROUND WATER	Broad Stree	t Parkway	/		I Consultants, Inc Project 98217

DEPTH		SAMP			SOIL AND ROCK DESCRIPTIONS	FIELD	STRATUM DESCRIP.	Remarks
FT.	TYPE & NO.	BLOWS /6IN	PEN ft.	REC ft.				
- 60.5 - 60.5 - 62.5		27-25 48- 50/0.3'	ĺ	1.5	GRAVEL WITH SILT (GW-GM) SAND WITH SILT (SP-SM) and SILT (SM) in layers between 0.2' and 0.5' thick.		GLACIAL TILL	
- 64.	3	1			64.3'			
65 	R1	13 min 10 min 7 min 9 min 23min/ 0.3	4.3	4.3	META SEDIMENTARY. Slightly weathered to fresh with fractures dipping at 0, 15, 30, 60, and 90 degrees from horizontal Fractures are spaced from 2" to 9" apart. RQD=52% A vertical fracture extends through 2/3's of the core All water lost during coring past about 67'.		BEDROCK	
68.	6 R2	9 min	_		META SEDIMENTARY.			
_ 70		7 min	1	3.5	Slightly weathered to fresh with fractures dipping at 0, 60, and 75 degrees from the horizontal. Fractures are spaced from 1" to 16" apart. RQD=48%.			
		10min 21 mir	1		10,00			
72	¹—	/0.5	-	-	Bottom of Boring 72.1'	1"		
80 						= -		
							1 7.7-	
8: - - -								
F ,	,							
2.0 I WOR	N. OD S -WEIGH -WEIGH	PLIT SP T OF RO	OON S DDS DDS A	SAMF	MER FALLING 30 IN. TO DRIVE A PLER AMMER F SAMPLER OR CORE BARREL			

BORING LOCATION 511+44 F			511+	44 R	34 DATE START - FINISH8/26/98-8/26/98 TUM_NGVD DRILLED BY Maine Test Boring					B1902
GROUND ELEVATION GROUND WATER EL.		141.5 DAT			/ <u>Maine Test Boring</u> / <u>Brian F. Jankauskas</u>		TAL DEPTH) 65,2		Page 1 of 3	
DEPTH	TYPE BLOWS PEN REC		REC	SOIL AND ROCK DESCRI	PTIONS	FIELD TESTS	STRATUM DESCRIP.		Remarks	
FT. 0		WOH -1 0-1	2	0.8	SAND (SP) Narrowly graded. Mostly fine sand, ~54 plastic fines, brown. FILL.	% non-		FILL		
5 5 	S2	4-4 4-5	2		SAND WITH GRAVEL (SW) Widely graded. Mostly fine to coarse sand, ~25% subangular fine gra plastic fines, brown. Slightly orange. F	FILL.				
10 10	S3	7-5 5-5	2	0.7	SAND (SP) Narrowly graded. Mostly medium sand <5% non-plastic fines, brown.	8.5'		=		
15	S4	10-9 13-13	2	0.6	Similar to S3.			SAND AND SAND WITH GRAVEL		
	S5	10-9 11-11	2	0.4	SAND WITH GRAVEL (SP) Narrowly graded. Mostly medium sand, ~20% angular fine grav plastic fines, brown.	rel, <5% non-				
25 25 	S6	10-11 13-12		0.2	SAND WITH GRAVEL (SP) Narrowly graded. Mostly medium sand, ~30% subangular fine of plastic fines, brown.	gravel, ~5% non-				
2.0 IN. WOR-W WOH-W PEN-PE	OD SP /EIGHT /EIGHT :NETR/	LIT SPO OF ROI OF ROI ATION LI	ON S S OS AN ENGT	AMPL ND HA 'H OF	MMER SAMPLER OR CORE BARREL	Notes: Cased (drive) wash boring.				
RQD-LE S-SPLIT	REC-LENGTH OF RECOVERED SAMPLE RQD-LENGTH OF SOUND CORE SECTIONS > 4 IN./LENGTH CORED, % S-SPLIT SPOON SAMPLE Sv-TORVANE Qp-PENETROMETER U-UNDISTURBED SAMPLE V GROUND WATER									I Consultants, Inc. Project 98217